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A flock of wild geese on the wing is no less than an inspiration. When that strong-voiced, stout-hearted company of pioneers pass overhead, our thoughts ascend and sail with them over the roofs of the world. As band after band come into the field of vision — minute glittering specks in the distant blue — to cross the golden sea of the sunset and disappear in the northern twilight, their faint melodious honk is an Orphean strain drawing irresistibly.

AFTER THE PAINTING BY
LOUIS AGASSIZ FUERTES

IN THE OPEN

INTIMATE STUDIES
AND APPRECIATIONS OF
NATURE BY

STANTON DAVIS KIRKHAM

AUTHOR OF
"WHERE DWELLS THE SOUL SERENE"
"THE MINISTRY OF BEAUTY"

"Over and above a healthy curiosity, or any scientific acquaintance, it is the companionship of the woods and fields which counts—a real friendship for birds and bees and flowers."

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TO MY WIFE
MARY WILLIAMS KIRKHAM
THIS BOOK IS
AFFECTIONATELY
DEDICATED

PREFACE

There is an estate on which we pay no tax and which is not susceptible of improvement. It is of indefinite extent and is to be reached by taking the road to the nearest woods and fields. While this is quite as valuable as any property we may possess, as a matter of fact few assert their title to it.

Nature is in herself a perpetual invitation to come into the open. The woods are an unfailing resource; the mountains and the sea, companionable. To count among one's friends, the birds and flowers and trees is surely worth while; for to come upon a new flower is then in the nature of an agreeable event, and a chance meeting with a bird may lend a pleasant flavor to the day.

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THE POINT OF VIEW

Nature is in herself a perpetual invitation: the birds call, the trees beckon and the winds whisper to us. After the unfeeling pavements, the yielding springy turf of the fields has a sympathy with the feet and invites us to walk. It is good to hear again the fine long-drawn note of the meadow-lark — voice of the early year, — the first blue-bird's warble, the field-sparrow's trill, the untamed melody of the kinglet — a magic flute in the wilderness — and to see the ruby crown of the beloved sprite. It is good to inhale the mint crushed underfoot and to roll between the fingers the new leaves of the sweetbrier; to see again the first anemones — the wind-children, — the mandrake's canopies, the nestling erythronium and the spring beauty, like a delicate carpet; or to seek the clintonia in its secluded haunts, and to feel the old childlike joy at sight of lady's-slippers.

It is worth while to be out-of-doors all of one day, now and then, and to really *know* what is

morning and what evening; to observe the progress of the day as one might attend a spectacle, though this requires leisure and a free mind. The spirit of the woods will not lend itself to a mere fair-weather devotion. You must cast in your lot with the wild and take such weather as befalls. If you do not now and then spend a day in the snow, you miss some impressions that no fair weather can give. When you have walked for a time in the spring shower, you have a new and larger sympathy with the fields. The shining leaves, glistening twigs, jeweled cobwebs and the gentle cadence of the falling rain all tell you it is no time to stay indoors.

Life in the woods sharpens the nose, the eyes, the ears. There are nose-feasts, eye-feasts, ear-feasts. What if the frost-grapes are sour — they are fair to look at. Some things are for the palate and some for the eye. The fragrance of blackberries is as delicate as the flavor, a spicy aroma, a woodsy bouquet, and to eat without seeing or smelling is to lose much. Clustered cherries, so lustrous black with their red stems, refresh the inner and the outer man. You may safely become a gourmand with respect to these wild flavors.

Their virtue is of the volatile sort that will not stand bottling; it will not enter into essence or tincture. You must yourself go out and pick the cherry under a September sky and in the presence of the first glowing leaves of sumac and Virginia creeper.

Does not the bayberry revive and exhilarate the walker, as smelling-salts restore fainting women? You have but to roll the waxen berry in the fingers, or crush the leaf, to feel that indefinable thrill which belongs to the woods, to the open air — the free life. Another vigorous and stimulating odor is the fragrance of green butternuts, which contains the goodness, the sweetness, the very marrow of the woods, and calls out the natural and unaffected, as a strain of music arouses the heroic. The tartness of the barberry matches the crispness of the air and rebukes the lack of vigor in us. No true child can resist the lure of wintergreen berries, while to nibble the bark of a fresh young sassafras shoot admits us to some closer association with Nature. A whiff of balsam is an invitation to share the abandon of the woods, and awakens memories of the halcyon days, the shining hours, when nutting and berrying were the real things of life.

One who is possessed with the idea of finding a certain bird or plant is in a fair way to the discovery, and sooner or later each will come into the field of vision. How the robin discovers the worm is a mystery to be explained on the score of *attention;* it is perfect concentration on a single point, with faculties trained in that direction. That the footsteps of ants were audible had not occurred to me till one day in watching the progress of the annual raid of the red ants upon the black colonies, I plainly heard the patter of their feet, as the column marched at double-quick over the floor of dry leaves. There are many sounds in Nature that only become evident when we give absolute attention, when we become all ear,—as there are things seen only when we become for the time an eye.

Sensitive and sympathetic natures rarely confuse one person with another, whereas the cold or obtuse really never see the finer distinctions in a face. They make poor observers. Any one unacquainted with birds will show by an attempted description that he has not in the least seen the bird. I have known old lumbermen who had not noticed the difference in the needles of the species

of pine, nor the leaves of oaks; but they knew the difference in the quality of the wood well enough, because that appealed to their interest and held their attention.

Preparedness adds zest to the walk and enriches it, precisely as a broad culture and a fund of information enlarge the view of the traveler. Notwithstanding what may be in the woods, it takes some understanding and some interest to see it. An unprepared person will see little; an uninterested person will see nothing. To many of the villagers the wood-lot is a remote and unfamiliar wilderness, and the warblers and vireos as unknown as any tropic bird. We should at least know the kinglets by their caste-mark — whether it be red or yellow — and the oriole by the colors of his ancient line.

Given a certain preparedness even the rocks become instinct with suggestion. They are more than stone, — even historical reminders, which incite one to long and pleasing trains of thought. In the mountains I came upon a flat ledge of shale which showed ripple marks of an earlier sea than any we know, a far-off Devonian ocean which once washed this primitive beach. They had long

parted company, and now the beach was up among the spruce and balsams,—such vicissitudes are there in the fortunes of all. The ancient waters had left their mark, that however high the rock might go, it should none the less speak of the mother sea. Again, the traces of glaciation on ledges and boulders appeal to the imagination with a peculiar eloquence. What a mighty cosmic plane was that which smoothed these granite ledges! It planed off New England as if it were a knot on a plank, and scattered over it the dust and chips of the workshop. These ledges serve as a fairly accurate compass, and are at least more reliable than the lichens on the trees.

Some men have an eye for trees and an inborn sympathy with these rooted giants, as if the same sap ran in their own veins. To them trees have a personality quite as animals have, and, to be sure, there are "characters" among trees. I knew a solitary yellow pine which towered in the landscape, the last of its race. Its vast columnar trunk seemed to loom and expand as one approached. Always there was distant music in the boughs above, a noble strain descending from the clouds. Its song was more majestic than that of any other

tree, and fell upon the listening ear with the far-off cadence of the surf, but sweeter and more lyrical, as if it might proceed from some celestial harp. Though there was not a breeze stirring below, this vast tree hummed its mighty song. Apparently its branches had penetrated to another world than this, some sphere of unceasing melody.

There is a difference in the voices of trees. Some with difficulty utter any note, or answer to the storm alone; others only sigh and shiver. There are days when they gently murmur together, as if a rumor of general interest had reached them. Again the woods are silent, until one enters a grove of white pines, when on the instant a sweet low chant falls on the ear. Come upon the aspen on quiet days and it is all of a tremor, in a little ecstasy by itself, while the rest are mute. Trees change their songs with the season. In winter the whistling, rattling, roaring of hickories and oaks is a veritable witch-song, beside which the voices of midsummer days are as the cooing of doves. During a quiet snowfall, the white crystals sifting through the pines convey the idea of a gentle sociability somewhere in the branches overhead, the softly whispered and amiable gossip of pine-needles

and snowflakes, old cronies who have not met in the past eight months.

The woods offer unlimited opportunity for making acquaintances, and nothing else stimulates the interest more than this. The keenest pleasure is in meeting a new bird: a rare and subtle stimulus not to be defined, to be experienced only and cherished as a memory. You stand in the midst of one of the mixed flocks of autumn — winter visitants with a sprinkling of warblers, and perhaps a blue-headed vireo and a pair of silent thrushes — and recognize old friends, with a chance of discovering a stranger. It calls out the zest for the woods like an appetite for dinner — a finer, more ethereal appetite, which is satisfied through the eye and ear. Occasionally the blue-headed vireo may be heard, though the season is far advanced, and the little Parula warbler indulges in a spiritual and melodious reverie, as if he already had visions of another spring and was communicating in a state of trance and ecstasy his prophetic thought.

One supremely mellow day the last of October, there came a pair of hermits to a secluded spot, flitting into a white oak, where they remained regarding me with round bright eyes. In due season

they crossed to the pine under which I sat, whereupon one, directly over my head, began cautiously descending from branch to branch through the lower dead limbs until he was but a few feet from my face. Here he sat, regarding me in a gentle friendly way and talking to himself in an undertone — or was he talking to me? The impelling force continued to draw my little friend — it was mutual did he but know, a true case of love at sight — for at last, with an indescribable little flutter, he dropped from his perch with the evident intent of alighting upon me, but changed his course directly in my face, and with a swift motion of the wings darted into the shrubbery. Upon a near view the spell had broken, and he was again the timid solitary thrush.

It is because the wild life is so shy and elusive that the unexpected encounters have such charm. They are altogether clandestine and romantic. You may stroll time and again without the least encouragement, as though wholly ostracized from this society; and then some morning you are welcomed on every hand and admitted to the inner circle of the wood life. About the woods there is ever an enticing mystery. They invite us to enter

as though they concealed some treasure we sought. A race dwells here apart, and we turn aside for that silent and refreshing company. When they speak, their speech is lyrical. There are men who have never known any friendship in Nature; others again who never outgrow the love of birds and flowers, who preserve some youthfulness and innocence which keeps them in touch with wild life. Over and above a healthy curiosity, or any scientific acquaintance, it is the *companionship* of the woods and fields which counts—a real friendship for birds and bees and flowers. Let us remember the woods in the days of our youth, that we may have this unfailing resource in later years.

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SIGNS OF SPRING

The approach of spring is felt, rather than reasoned about. There is that in us which rises to greet the incoming tide of the year before our eyes have apprised us of any change. Winter lies over the world much as ashes are banked on coals for the night, which nevertheless retain their heat and will be found alive and glowing in the morning. In the tropics the fire is not banked and there is no cold dawn with anticipations of the kindly blaze soon to arise, no gradual uncovering of the cheerful coals. Here in New England the dawn is rigorous and spring more welcome. The winter buds are evidence that it is not far away, and it takes but the least encouragement at any time for this latent heat and life to awake and show itself in the high blueberry twigs. Such buoyant faith has the skunk-cabbage it never entirely loses sight of spring, but exerts some spell over its muddy bed, whereby you may see that there, at least, it has already come in November.

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The reddening of the twigs is in effect a prelude, and precedes the real spring as dawn precedes daylight, or twilight the night; this is the dawn of the year and these blueberry twigs its first flush. Smilax turns suddenly green as the sap circulates in its spiny stems, and the brown and sear aspect of the earth is relieved and enlivened. This early green is as refreshing to the eye as the first rhubarb to the palate.

One of the earliest signs is the little rosette of bright-colored leaves on the smaller hair-cap mosses, growing in contact with an outcropping ledge. You may see whole patches in the pastures, varying from orange to deep red, a vivid bit of color next the brown earth and looking like diminutive blossoms. Then come the fruiting spikes of the common field horsetails, poking out of some sand-bank. These signs of the awakening season appeal to the trained eye rather than to the casual glance. Such an one detects the slightest swelling of a leaf-bud, the faint reddening of a twig, the deeper green of another. The sap dripping from the freshly cut limb of a birch, or pendent from the wound in a long glittering icicle, is evidence of the quickened circulation of

the earth. Among the thick mat of dry leaves you may perhaps find the delicate shoots of wood anemones, and in the swamps the tightly rolled stipes of the osmunda, like little croziers, while there is ice yet in the leaves of the pitcher-plant.

Deep lying in all men is a poetic vein which now appears on the surface. The first pussy-willows and the arrival of bluebirds arouse sentiments as common to us as the love of music: some suggestion of renewal, of awakening after the sleep of winter, which touches even the rough man and makes him kin for a day to the child. We embark each year on the sea of winter, with unquestioning faith that on its other shore spring awaits us, once more to shake the violets from her lap. When, in March, that shore looms in the distance, we feel the joy of travelers in sight of their native land. There may be rough seas, and March winds are blustery, but *there* in sight, nevertheless, is that faint outline on the horizon.

No blossoming rod of Aaron could appear more miraculous than do the flowering willows. These twigs of brown and lifeless aspect suddenly burst into bloom and array themselves in exquisite silvery gray catkins, while the snow may be still

on the ground. Not long after, the alders in the swamp unfold their clusters of drooping aments which have been on the tree stiff and rigid throughout the winter. Thousands of little tails are thus mysteriously hung out on the alder twigs to sway gently in the breeze, turning from a reddish hue to a sulphur-yellow as they expand and become powdered with pollen. Born into a frosty world when the feeble sun is still distant and cold, the March flowers are a link between winter and spring. But Nature has certainly relaxed her features; there is just the ghost of a smile on her icy lips.

This year I heard the bluebird's warble on the 4th of February, but did not see the bird, and heard no more till early in March, when they came in flocks. Out of the sky comes to us this liquid note, as if the heavens had opened and poured upon us their benediction. How sweet it is to the ear, what music to the heart! And when suddenly a little flock starts up from the wall or fence, how rich and welcome to the eye, long denied its modicum of color, is the blue of their backs! We have had little but artificial tastes and colors and perfumes for so long that the senses

seize with avidity these first offerings — we are hungry for them.

It changes the whole aspect of things, when on some raw day the first redwing of the season appears — a vivid bit of color in the bleak swamp, a hopeful and melodious voice breaking the silence of the year. The birds are shy and elusive on their arrival and we have every year to become acquainted again. Even the robins are furtive and silent, flitting in the sheltered swamps; but the middle of March finds them calling to each other in their old jocular way. Drawn by the same subtle influence, the angleworm seems to work toward the surface about the time the robin is thinking of the lawn, till one day they meet as by appointment. If the season is late, the worm retires below where it is less frosty, and the robin takes to the sumac berries, or whatever else he can find, and defers his spring relish a little longer.

Round about there is an awakening as from an enchanted sleep; the drowsy world yawns and stretches. The highhole is in evidence, and his rattling call is calculated to awake the sleepers in that pasture at least. Soon the chipmunk is on the wall, and the woodchuck warily pokes his head

from his burrow. This note of the highhole is irrepressibly exuberant and ringing with energy. If it does not prove a tonic to you, nothing else will. He is even more emphatic in his drumming. His lively tattoo goes well with his vigorous call. Time to be up and doing! *Wake up! Wake up! Wake up! Wake up! Wake up!*

Presently the first flock of fox-sparrows drop down from somewhere and go to scratching among the leaves, like so many chickens. The present season a flock of perhaps fifty settled in and around a thicket on March 24th. Their bold clear notes could be heard some distance away, and drew one in that direction. Numbers of them were hopping about, and occasionally a bird would rise to a branch overhead and sing, looking like a hermit-thrush as his back was turned. The place was given over to the sparrows, and never was thicket more tuneful. There was the sound of unceasing revelry — a sylvan and melodious revelry.

At this season the impulse to expression is natural and daily becomes more evident. Even the crow begins to affect music and to show off his accomplishments. But it is Mlle. Corbeau, and not M. Reynard, that incites him to this exhibi-

tion of vanity. You may hear him in the pine grove, apparently gargling his throat, which is meant for a gay roulade to please the ear of some dusky beauty lingering near and perhaps affecting indifference. This is only a prelude to the astonishing falsetto that sometimes follows, and which, be it hoped, may prove more acceptable to Mlle. Corbeau than to our more critical ears. It is very evident something is going on. The large flocks of winter have given away to small and excited bands which keep up a perpetual clamor. It is no surprise, then, some day in March to detect a crow carrying twigs.

At no other time is there such concerted singing among the song-sparrows as in these first days of the arrival of any considerable flocks. From bare fields and brown hedgerows arises this simple and spontaneous expression of joy, a primitive invocation to the goddess Spring, fresh and clear and innocent as the morning itself. As they hop about among the dry weeds, one will now and then pick up a straw and hold it meditatively a moment with some premonition of the nest. Presently they will be flitting among the still leafless brambles and briers with an air of secrecy and im-

portance. Some bright morning in March there comes to the listening ear the song of the purple finch — a wild sweet strain with the abandon of gipsy music, which thrills with its very wildness and unrestraint. Anon Phœbe arrives with dry little voice and familiar swoop after the first incautious fly.

Every season has its characteristic song. More than all others is the voice of the hyla, essentially springlike and to be associated with no other time. For several days there has been an occasional desultory chirp from the woods, when of a sudden, some clear evening, there comes out of the stillness that wonderfully sweet piping of little frogs. Fresh and ringing as child voices, it has, at a distance, a certain rhythm, a soothing cadence, which lulls the ear like the musical patter of rain-drops in summer showers. Put your ear close to one — if you can find him — and the sound is deafening, so loud and shrill it pierces to the very marrow. The small creature sits in some low shrub in the swamp, grasping a twig on either side as with tiny hands, while it inflates its air-sac from time to time and sings the love-song of its race. Heard afar, how soft and pleasing are these answering

calls of the hylas which are the very voice of the evening itself.

About the time the hylas begin to sing in chorus, you may look for the appearance of the leopard-frog. He is to be heard at midday in his pond uttering a most deliberate and prolonged snore, evenly and smoothly drawn out, as if his sleep were dreamless and content. Presently there is an answering snore, full as deliberate and serene, from across the pond, followed by long intervals of silence. Very different from this somnolent song of the leopard-frog is the shrilling of garden-toads. Not every one would recognize the solemn and dusty toad of the flower-beds, that flops from under the feet in the dusk, in this brighter colored creature, floating at full length in the shallow water, his air-sac inflated before him like a parti-colored bubble. The shrilling of toads fills the air; they are under a spell, a witchery, which has set them all to chanting this single strain — high-pitched and subdued — with a sort of mild frenzy.

April brings the twittering of tree-swallows, and spreads a tinge of color like a faint red mist over the swamps. This flower of the maple is one

whose virtues are seldom sung, as though the blossoms of trees counted for little. Surely the bursting of silver-gray rods into this vivid bloom is an event worthy the muse. It is not only in autumn the red maple graces the swamp. These modest blossoms of the early year — willow, alder, poplar, elm, maple — must have their place in the flower calendar, are worthy a Festival of Trees, to be associated with the song of the hyla.

Anything like an exact flower calendar is out of the question, for much depends on the locality and the season. We look for bloodroot and hepatica to follow arbutus, and yet I have on occasion found bluets several weeks in advance of these. The saxifrage is perhaps quite as early as any, though I have seen the buds of the marsh-marigold about to open on the 25th of March. Much depends on which has the more favorable spot in any locality. In a warm nook, on the 13th of April, bloodroot, hepatica, spring-beauty, early saxifrage, dicentra, wood- and rue-anemones and adder's-tongue, as well as common blue and long-spurred violets, were blooming together in profusion. The saxifrage and bloodroot might, of course, have been seen a week earlier. In the

same spot several days later, columbines, miterwort and groundnut, and also sweet white violets, downy yellow and lance-leaved violets, were added to the list and were followed by bellworts and wood-betony. This was in northern New Jersey. Meanwhile I had seen only the common blue violets in the Connecticut Valley, while in eastern Massachusetts the wood-anemones were not in bloom, and the leaf of the columbine had just appeared above the soil. This particular spot was evidently a sort of natural forcing ground where the columbine was made to bloom with the bloodroot. What becomes of your flower calendar here? Looking still for signs of spring, I came full upon the fickle goddess herself.

Before we know it, the migration of warblers has begun and the keen ear detects their thin wiry notes. But this is not so much a sign as it is the fulfilling of prophecies.

BIRD LIFE

Walking through bare fields in the chill and birdless world some winter days, it is brought home to us what an *essential* feature of our surroundings the birds are, what a lack there is when they are absent! A certain poverty lies over the earth; the sky is no longer complete without a swift or a martin. Birds are part of the landscape; it is they which animate it. Rarely, when it seems most destitute, a flock of snow-buntings will come swirling over the pasture, like great snowflakes driven before the blast. Again, as the wind will pick up dry snow and blow it over the field, they are off and whirling away, glittering in the pale yellow light of the winter day as they wheel and come to the ground. But their presence has redeemed and softened the austere landscape, made the earth habitable once more and the bare fields friendly and companionable.

The first snipe and plover in the spring remind us what stay-at-homes are we, what wanderers

they. We must appear to them but poor mollusks, as they come and go each year on their way from Patagonia to the Arctic Circle. In how many States, in what diversity of climes they are at home! And wherever they may be they get their own living by no one's favor. This prodigious self-reliance affects one as a species of heroism, whereas it is as unconscious as the falling rain.

What familiarity with the elements and with natural features of the earth the migrating birds must acquire — with winds and clouds, with mountain chains and rivers and coast lines! They know the landmarks and guide-posts of two continents and can find their own way. The whistle of curlew, or the honk of wild geese high in the air, seems a greeting out of the clouds from these cosmopolites, to us, sitting rooted to the earth beneath. A flock of wild geese on the wing is no less than an inspiration. When that strong-voiced, stout-hearted company of pioneers pass overhead, our thoughts ascend and sail with them over the roofs of the world. As band after band come into the field of vision — minute glittering specks in the distant blue — to cross the golden sea of the sunset and disappear in the northern twilight, their

faint melodious honk is an Orphean strain drawing irresistibly.

A sort of noble madness seizes the birds in the spring, so that an exodus of inconceivable extent takes place toward the North, as though the Pole were a magnet to them. There is a suggestion of epic splendor in this vast impulse, this flight of the feathered tribes of the earth. We may well ask the bobolink, What news from Brazil? and the returning plover, What of the Frozen Sea? What bird-memories do they cherish of these remote regions? It casts a halo of romance about them, that they should thus be at home in lands that may perhaps remain ever unvisited by us.

As if actuated by a sublime faith, in the midst of plenty they arise and depart, drawn ever to the remote solitudes to rear their young, like those citizens who return to their own country that their children may be born in the Fatherland. I do not know if our affinity is greater with the bob-white and the ruffed grouse, which hear no call to depart, or with these nomads of the earth. In the coldest weather, redpolls, crossbills and snow-buntings come to us as to a land of plenty. This is near enough the equator for these hardy

birds — this is their genial South. It is pleasant to reflect that the falling mercury, which deprives us of the last of the summer residents, will at the same time bring us some dweller in the far North which perhaps otherwise we should not see.

The advancing season makes itself known through the songsters; they have keener perceptions and receive other intimations than come to us. Day by day, as by appointment, they reappear from Florida, from the Amazon and the Orinoco, and make themselves at home again in northern pastures. I have come to look for the tree-swallows as regularly on the 1st of April, as for the oriole on the 10th of May, as if these were calendar events of real importance. Between the middle of April and the 20th of May lie the incomparable days of the migrating warblers — days of discovery and adventure, when the torpor of indifference slips away, and, like a subtle fire in the blood, is felt that enthusiasm the years do not diminish. When, at night, the small birds pass overhead, their faint silvery "tseeps" come out of the silence with a weird suggestion of voices from the unseen world.

Now, the days are full of pleasing suggestions because of little birds shyly flitting with plant-

down and with rootlets and dried grasses. Some are unmistakably house-hunting, and the female turns herself about in the crotch of a limb, trying if it be of the right proportions. Interest in bird life centers about this season. This is their life; the rest is a preparation or a waiting. It is only natural there should be an air of secrecy about them now. They are doing their best to conceal and elude, as indeed they must, and this necessity, being uppermost in their minds, becomes evident in their manner.

While I am watching a pair of pewees gather lichens from an old maple for their beautiful shallow nest, the barn-swallows shoot by with mud for their adobe huts. Now and then one pulls from the mud a few fine rootlets — perhaps of the white violet or gold thread growing there — and carries them off. They evidently know their trade. A chestnut warbler appears with some plant-fiber in her bill, and gives a cluck of surprise and disgust to find some one on the ground where she thought to have her secluded and private estate. She hesitates with the down still in her bill; it is evident what she must be thinking; but at length she decides to risk it, and enters the huckleberries.

She has, of course, gone into the bushes a long way from the nest. One has great sympathy with the birds in their little circumventions and dissimulations, knowing their tribulations. They live among their numerous foes much as did the early settlers in this land,—that is to say, in spite of them. The weasel, the owl, and the cat—the terrible cat—are appointed to decimate the population of birds.

In the several nests of warblers, I am observing, the thrifty housewife is evidently the home-builder, whereas the mail seems to take it upon himself merely to cheer and encourage her. After she has constructed a framework she settles herself in this and builds the wall around her, quite as if she were fitting a garment to herself. Her little ways while so engaged are distinctly feminine. To think that she has never been taught her trade, has perhaps never before fitted such a garment, and she is already deft and expert! The pair seem to take an almost human satisfaction in their home. Now and again they appear to talk it over together. Who can doubt they have some pleasure in this preparation, that they have bird-plans and bird-hopes?

We do not really know a bird till we have found its nest and seen it at home. When I came upon the nest of the snowbird in the midst of a clearing in the mountains, it was like visiting the house for the first time of one I had known for years — a person of some distinction at that. It was placed high and dry on a tussock in a flaming patch of hawkweed. She had an eye for the practical, and knew better than to put her house where the cellar might be flooded. The four greenish mottled eggs were her one priceless treasure, which was to her as life itself. They were warm, and the whole aspect of the nest was sweet and inviting. It appeared to breathe some feminine element, so dainty was it, so begirt with flowers.

A humming-bird's nest that I have been watching the present season is placed on a pitch pine-cone, and appears to a casual view to be the cone itself. It seems as if the bird had it in mind to simulate this or she would not have chosen such a peculiar site, for it affords no advantage from a structural point of view. If this be true it is a departure from all traditions, and shows a bird of some character and originality. In other respects

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BIRD LIFE

it is like any humming-bird's nest — one of the most exquisite of all natural objects.

In the course of ten days, in place of one of the eggs appeared a small and peculiarly homely object which resembled a spider as much as anything. Two days later the other egg was hatched. At this stage the bills of the young birds were very short, but day by day they lengthened and grew more needlelike. At length one bird opened its minute and shining black eyes for the first time. The other fell from the nest on the following day, before its eyes were opened, so that all it had known of life was the consciousness of hunger.

The female fed her young with much less frequency than do other birds. When so engaged she perched upon the rim of the nest and pumped the food into them after the manner of her kind. As she flew to and fro, she appeared to move always at the same speed, as if her wings were keyed to a definite rate of vibration and could not vary. Gradually the young bird emerged from its gruesome infancy, and day by day became more sylphlike. Heavy winds prevailed, but the diminutive cradle remained unharmed, though branches were everywhere blown from the trees. So was

the wind tempered in that case at least, till one day the sylph left the nest, as a thistle-down might detach itself and sail away on the breeze.

Birds have their home-trees, and one whose traditions are of the pine is not drawn to build in hardwoods. The woodthrush is associated with the dogwood, as the catbird with the smilax, and the oriole with the elm. There are ancient apple orchards which have come to serve only the bees and the birds; but what temples of music in May with the hum of bees, and in June with the song of wrens! At this season you cannot do better than to set out for one of these old-time orchards, neglected of man and favored of heaven.

The virile hum of honey- and carpenter-bees descends from the flowery summits to the listener beneath, the contented music of a race dwelling overhead and nearer the skies than we. It is such an apple — Baldwin, pippin, or russet — gnarled and archaic in trunk and a bower of beauty above, which becomes the home-tree of that feathered gnome, the house-wren, a sprightly elf, living in the depths of a tree trunk and yet full to the brim of song. He may derive of the flowing sap some genial trait and takes to the apple as a swift to the

chimney, or a redwing to the swamp. After the cold rains of late May have taken off the blossoms and with them the bees, the place becomes melodious with his song. It is thenceforth his estate, and he dominates it with his small personality. With him his house is his castle, and in true medieval fashion he barricades his door. Within is snug enough, but without it has a feudal and forbidding look,—a formidable barrier of twigs, erected perhaps against the house-sparrow or for fear the robber-owl may peer too closely.

In this choice of a building site the bird reveals something of itself. Contrast the wren with the phœbe, a cliff-dweller, loving the contact of the ledge itself better than any bush or tree. The song-sparrow has an eye for the wild rose and the yellow warbler for apple blossoms, but the phœbe has some austere traits which make the stern rock more congenial to her. Some birds are architects, others builders merely. The vireos are a family of artists, whereas the improvident cuckoo will not even lay a proper floor to her nest.

A look into some nests is a glance at the domestic life of a savage people, and yet we find the virtues we most esteem — patience, perseverance

and fortitude. Hour in and hour out the faithful kingfisher flies from the nest to the fishing-ground, bringing each time a small fish. He is a primitive and industrious fisherman who gets an honest living by his skill and supports his family, yet he is under ban, while the dilettante whips the stream for his pleasure. The hoarse rattle of the kingfisher is an altogether barbarous chant with which he beguiles himself as with a hunting song. His is an austere temperament with no room for melody. But that he returns every year to the same nest — the ancestral hall — is evidence of some more domestic and kindly trait in his character.

This nest is an excavation in the sand, high in a bluff, and is perhaps five feet deep,— a true cave, and its inmate a cave-dweller. We have thus both cave- and cliff-dwellers among us — primitive states of man still exemplified by birds. The cave-dweller had something in common with the kingfisher, which led him to burrow in the earth for a home.

That was truly an aboriginal abode which I came upon in the spruce woods in a region of perpetual twilight. The somber spruce was relieved only by some veteran yellow birches and by ghostly patches of false miterwort on a projecting

ledge. High in a birch was a small hole from which the scarlet crown and chin of a sapsucker appeared in view, as the bird thrust out his head and looked inquiringly about. A harsh imperious call brought the female, who clung to the trunk till the male came out, whereupon she dived into the hole herself, while he in turn went foraging.

Whenever the pair were absent from the nest the insatiable young were heard squealing within. It was a fearsome place that was home to these young savages, a room within a tower, lighted by a single small window far above. To think of being born and raised in the dark heart of a tree! The old birds called to each other from time to time as they hunted over the neighborhood, and their speech was as that of wild men, the very rudiments of language — rude, uncouth and evidently of few words. But, as with the speech of savages, these words were doubtless packed with meaning, whole sentences and paragraphs in themselves, of hard and practical import. Now and then the scarlet crown appeared at the entrance of the dark wigwam. Any lurking foe would be espied from there. Probably not a twig moved below but it was noticed.

While the robin and the bluebird have come to wear a half domestic look, the woodpecker is the untutored savage still. As an Indian remains an Indian, a woodpecker remains a woodpecker. When he comes to the orchard he is an interloper from the forest. He carries the stamp of the wilderness with him. Defiance is in the poise of his head; his attitude is a challenge.

The life of owls and hawks is completely *savage*—a fierce, carnivorous, terrible existence which no circumstance can affect. Regarding their young with solemn ferocity, their fierce natures are not to be modified or softened in the least. A little red owl having her nest in the heart of a weeping willow, lived so secluded a life her presence was hardly suspected till she was discovered by the smaller birds dozing in a cedar. Some days later she appeared at dusk with four young owls, which she fed on large beetles. The owlets remained perched in a line on the fence while the old bird in ghostly silence departed into the night in search of food. It was wonderful to see what excess of dignity and ferocity was expressed in the personality of these little birds. As well have expected an Iroquois brave to ask for quarter. Approach

them and they were on the defensive with all the tricks of appearance — staring eyes, snapping bill and uncanny wavering motion of the head. Like some phantom creature, the old bird came and went, leaping noiselessly into the darkness and reappearing as by magic.

The owlets took their beetles with avidity, swallowing them whole and gulping and gagging in the process in a manner indicative of discomfit rather than any satisfaction over the meal. Once the mother brought what in the darkness appeared to be a small mouse, and this too was swallowed by one little owl, but only after heroic and protracted efforts.

It was no great matter on the following day to gain the confidence of the young owls to a slight degree. But food was the only bond of affinity. So long as I fed them they were content to perch on my finger, fierce and solemn little ruffians, and devour bits of raw meat. Their manners remained sullen and forbidding, though they never refused to eat. Soon they lost even this slight contact with our world and disappeared into their own — the nocturnal and barbarous world of the owl.

Every year there is fresh evidence that the

course of true love runs far from smoothly with the birds. A pair of yellow-throated vireos built no less than three nests one season and only succeeded in occupying the last. There were two suitors for the affection of the female, and they fought continually. The rejected lover harassed the pair while at work gathering material, and that he twice stole a march on them and actually tore down the nest appears from circumstantial evidence.

Great secrecy was observed in constructing the third nest, and the rejected one no longer harassed them. Either he had transferred his affections or been fairly vanquished. Life was strenuous and impassioned with these little birds, but see what constancy and perseverance! Fancy having two houses torn down, after completing them with your own hands, and having the courage to build still a third! There is something of the pioneer and frontiersman in this. The offspring of this pair were the children of vigorous and romantic times, and should have inherited some heroic traits.

Even if all goes well otherwise, the sanctity of the nest is liable to be profaned by the cowbird.

This spring was an unusually favorable one for them. I noticed the least flycatcher and the Maryland yellowthroat mothering young cowbirds, and many vireos and warblers so engaged. It is a wary caution that leads the cowbird to choose the smaller birds for her victims.

It would be hard to say which of all the foster-mothers is the more solicitous of her charge. Now it appears to be the redeye, and again the chipping-sparrow. All alike are bent on bringing the birdling to maturity as though it were of first importance. *That* cowbird shall thrive though the heavens fall. The attention seems to be in proportion to the egregious demands of the foundling. Here at least is a waif well cared for, an upstart that takes precedence over the true and lawful heirs. Another year this same adventuress will invade the nests of her adopted sisters.

The yellow warbler is perhaps the oftenest chosen. Accessible and easily found, the nest is a beautiful cup-shaped structure lodged in the fork of a fruit tree, with perchance a spray of blossoms just over it — a house of silk, a satin bower. How awkward and uncouth must the cowbird appear squatting on this fragile silken thing to lay her

eggs! Doubtless she watches the yellow bird stripping the dry grass stems and gathering the pappus of last year's cattails; squats low in the grass and looks all unconcerned while she marks the tree to which the fluffy material is carried, and bides her time till the nest is ready. Strange that she should never discover in herself the home-making instinct, for even nomads have their tents. Stranger still she should never once wish to undertake the duties of motherhood.

For a time, perhaps, the young cowbird is influenced by the habit of the bird that happens to mother it, whether this be a ground-sparrow or a tree-loving flycatcher. But it grows up a cowbird with all the inheritance of that peculiar tribe, and its brief contact with a superior race leaves no impress upon it.

In spite of cowbirds and the exigencies of life the woods are full of young birds, their tails not yet grown. This is their childhood — a brief one — as the days in the nest were their infancy. They are exacting children, yet they do not clamor to be amused, but only to be fed. I have seen a young chipping-sparrow, its tail half grown, showing how recently it was from the nest, pick up a

straw and carry it about. So early does the maternal instinct show itself. This straw was its doll-baby, the only plaything it could know, and this its solemn play. There is a mild and innocent expression about young birds, as there is in the faces of children, apparent to a keen vision only. They have yet to be hardened by experience and vicissitude. The countenances of the old take on an astute and alert expression. These young black-and-white creepers and chestnut warblers, now shifting for themselves for the first time, come about with gentle confidence. They creep and flit through the trees, coming nearer and nearer, until you look directly into their small innocent faces and could put your hand upon them. Then as it would seem they were about to descend like blessings upon your head, they withdraw and recede from view into the wilderness of leaves where only your thoughts may follow them.

SONGS OF THE WOODS

We are drawn ever by the voices of birds. Even such as might be called monotonous and unmelodious are none the less significant and welcome. The fine lisping notes of warblers, as they industriously hunt for their food, seem expressive of the contentment of their minds. All over the hemlock swamp I hear the voices of black-throated green warblers. Not one may appear in view, but for hours together their musical conversation continues in the treetops. From somewhere in the branches above comes the call of a nuthatch, his speech wholly dissimilar from the rest, as if he might be an inhabitant of a very different world. Almost in the ear sounds the thin wiry note of a black-and-white creeper, as he winds around the trunk of a pine and approaches with his accustomed sociability. High above the others, the trill of the pine-warbler rings clear and sweet — a more resonant instrument surely. These voices all affect us agreeably, and bring us in immediate contact with

their world and with wood life. They do not touch our world, however, nor set in motion the delicate mechanism of the emotions. But let a bluebird pass overhead all unseen, warbling his celestial "Pure! Pure! Pure!"—let that significant note fall on the ear and for reasons unknown it sinks into the soul, into the abyss of *feeling*, and this as mysteriously rises in a delicious flood to the surface. Whence has the bluebird his power, that by the mere *quality* of tone he can exert this spell?

Some bird voices are so positive, so emphatically cheerful, that one never hears them without feeling better for it. The chickadee in the winter woods is an instance of this. If you feel dreary, *he* does not. Nothing can dampen his spirits. He hopped out of the nest a cheery little chap, and it is never otherwise with him. In all his days he has never had a regret, never transgressed any law, never been unhappy. The voice of the chewink, too, is eminently sane, a mild, buoyant utterance indicative of an even disposition. He is never more hopeful, nor less so, but always exactly the same. Perhaps the birds have not what we call *feeling*, but if not, why do they express themselves? What else would prompt these songs? The clear sweet

call of the bob-white is full of hope, and there is a quality of tenderness in this voice. One must believe it the outcome of the disposition and character of the bird, of some refinement of feeling; just as the raucous call of the English pheasant expresses grossness and density, and the quailing of the hawk pure savagery.

If we may speak of the temperament of birds, the thrushes must be accorded the religious temperament. They are the inspired singers; their songs are eminently *sacred* music. The woodthrush appears to be actuated by other than merely commonplace and personal motives. Upon him the forest has laid its spell, and he must deliver its message. He flits about with a dignity befitting his high calling. There is no abandon in his song; he does not sing about himself — has no moods — but repeats his solemn chant. It breaks the stillness of the woods with a sort of challenge to the gay fields beyond, like the call of the muezzin from the minarets of the mosque — a summons to all twittering sparrows and chattering squirrels to be silent and listen. That such fervor, such solemnity and beauty of utterance should be unconscious and unwitting seems incredible. Stand and

listen to the hermit-thrush and see if you can think idle thoughts. You must hear his message and feel the spirit of his invocation — the voice of one crying in the wilderness.

Why is the hermit moved to be thus didactic, while in the fields beyond the field-sparrow lightly trills and the merry bobolink continually bubbles over with song? Such merry jingles, such uncontrollable outbursts of melody, such a rippling, bubbling medley as comes up from the meadows, while the thrush solemnly intones within the twilight shades of the woods! Surely in view of this we may speak of the temperament and the personality of birds. If the bobolink's medley is not evidence of a light heart, then are appearances deceptive indeed. Care rests easily — if at all — upon his hopeful nature, but the burden of his song is quite as well worth heeding as is that of the thrush. One is lyric, the other didactic. The bobolink communicates his joyous and irrepressible spirits, as the thrush his serene exaltation. It is certain the wood birds are of a different temperament from the field birds. Either they are influenced to their prevailing moods by their environments, or they are attracted thereto by their own

peculiarities, as men are drawn to solitude or society.

The hidden, the subtle, find voice in the veery. His is perhaps the most spiritual strain of all, himself the high priest of the mystic lore of the forest. Of the thrush family he is the consecrated member, as the robin is the worldling among them. I believe there is no other bird voice so mysterious; so impersonal is it, so spiritlike, it appears to emanate from a world of higher motive than ours. In the devotional strain of the hermit, the forest prayer is breathed on the mountains. No hymn could be less impassioned, less material, more truly *spiritual* than the song of this thrush; it is nearest the speech of angels. Of all instruments the organ and the harp are alone capable of producing any such effect. On rare occasions I have heard the veery indulge in a reverie never to be forgotten. It appeared to be wholly inspired and original as though the bird were improvising like some Abt Vogler at his organ, rearing a palace of music. The motive was complex and involved, and sung so *pianissimo* as to be just audible, like the love-song of the catbird, a rapt utterance which admitted one to the sacred arcana of Nature.

It is not unprecedented for a bird to depart thus from its usual song and to improvise. You may detect even the jay in this mood, though it is wholly imitative with him. The love-song of the catbird and the autumn reverie of the song-sparrow are perhaps the best instances. I am not yet wholly familiar with the songs of the robin. It appears he is still studying music, and adds a phrase or varies a theme occasionally. He is the most romantic of the thrushes; his song is more personal and less spiritual than the others. When, in early spring, the robins sing together at sundown, there is an exquisite tenderness in their notes which accords with the sweet youthfulness of the year. It is later in the season, when his mate sits upon the nest, that the robin rises to the heights of lyric beauty and pours out his soul from the top of the tallest maple in the swamp,—a brave sweet love-song, sung with dignity and without hesitation, that all his world may hear.

At dawn he is moved a little more to the rapt and religious expression of the thrushes. Something there is in the solemnity of that hour which touches the hearts of all little birds. What it is we shall perhaps never know; shall never know

enough of bird life to understand what emotions they may have which so powerfully sway them and become evident in their voices. The evidence is there; the cause is to be inferred. While the birds are everywhere more or less affected by the approaching day and give voice to their feelings, there appear to be musical centers in the bird world in which the expression is more concerted than in other localities,—favored sections where this hymn to Apollo is memorable indeed and hardly to be described. It is a great chant with all its solemnity, all its impressiveness.

Beginning with the desultory calls of wood-pewees, it is taken up by song-sparrows, robins and catbirds, dominated by the devotional song of the woodthrush who appears to act as chorister. Birds seem to congregate from near and far and to inspire one another to unusual efforts. The volume and stateliness of this chant, so measured and rhythmical, carries with it vibrations of power and cannot fail to communicate its influence to the listener, be he bird or man. Here is a multitude of birds actuated by a unity of purpose, impelled by a single motive, and though every one sings his own song, the myriad voices blend in one con-

cordant whole. To arouse suddenly from a sound sleep in the woods at dawn while this chant is in progress, is like awakening in another sphere, where sings the choir celestial. We slip from sleep into the heaven of song, and it requires another awakening to bring us to consciousness of this actual world about us.

They are the troubadours these birds, the wanderers whose souls are in their voices. What bold romantic singers are the cardinal and the rose-breasted grosbeak — the lords of song! When the cardinal comes North he appears to feel out of his element and modestly withdraws. But in the South he dominates the swamp and adjoining cotton-fields with his rollicking, melodious voice. A gay minstrel, he compels attention. These voices of the cypress swamp are clear and bright in contrast with their dismal surroundings. The bell-like note of the tufted titmouse in the treetops, and the brave, cheery song of the Carolina wren lighten those fearsome shades. The wren carries his sunshine with him. There is no minor in his song; he is never discouraged, any more than the chickadee. Day after day that voice rings true — all's well with the world. Brave voices singing in the

wilderness, they lighten vaster shades than any they know of, sound their note of courage and well-being for other ears than theirs. What blessed transformation from the songless ages — from that slimy reptilian world where was no music, no song — to this unpaid minstrelsy of the woods and fields! They have served us these many years — the sweet singers, the true birds of paradise, with power to lift us from our dull, unmelodious thoughts into their harmonious world.

As I was following the course of a mountain stream through the leafless woods early in April, the silence was broken by a strange musical alarm. It was the Louisiana water-thrush, but might have been the pipes of Pan, so wild and woodland was it. The first notes were high and startlingly loud and clear, while the song descended the scale and became softer and softer till it died away. This is one of the bird voices that are untamed, that seem to belong to impersonal Nature. It is wholly savage — a piece of the wilderness, untouched by the presence of man. These voices do not strike the human and sympathetic chords, but ally one with the wilderness. Such are the cry of the loon, the melody of the ruby kinglet and the song of

the winter wren. The kinglet's song has a cadence unlike any other, reminding one of water murmuring underground, and for some reason a classic suggestion, as of faun and satyr. It is more truly *sylvan* than any other — sylvan in the old Greek sense, so elusive and shy it is, so mysterious.

Such voices give no evidence of self-consciousness; they are as impersonal as the winds or as the murmuring stream. But with the catbird, the thrasher and the mocking-bird, pre-eminently vocalists, there is a set and declamatory method which has the appearance of affectation. Their songs are brilliant and elaborately phrased, but they lack spontaneity, and in listening to them one wishes they had put their powers to a different use. The thrasher is particularly self-conscious and stagey, and yet he has a glorious voice. No bird has a finer *quality* of tone than he shows in some of his notes — clear, mellow, vibratory as in the voices of really great tenors. It is that quality which Nature alone supplies and no cultivation nor perfection of method can give. When he speaks to his mate in an undertone his voice would melt a heart of stone. There is a time, however, when the catbird rises above any suspicion of self-conscious-

ness and is transported, and the listener with him, in a reverie of exceeding beauty. It is a wondrous love-song, an incomparable madrigal, blending with the morning sunshine and the first green leaves of the alders, soft and low as faint murmurings of a stream, a fluid melody uttered for chosen ears.

All too soon the only bird notes are those of the redeye and the pewee. For music we have the tree-toads and cicada. The sounds of this season are rhythmic and vibratory — virile songs of the year's manhood — the mature year, lusty and vigorous. But how soon they dwindle and wane, despite this sonorous protestation, grow silent and slip into the sear and yellow, and thence into the leafless, the glittering, the sublime aspects of winter! The last of September brings with it just a reminder of the sweet and winsome sounds of spring. At this season the song-sparrow indulges in a wonderfully ecstatic reverie, a bit of wild melody charged with feeling as of some larger consciousness, some tribal memories of that musical race, now finding voice in the waning year. So continuous and varied is the theme, and withal so complex and involved as compared with his usual simple and positive lay,

that one must look at him twice to make sure it is he, and not some unknown minstrel from a distant shore.

Insects are the autumn singers and take the place of birds and frogs. The crickets are as musical in their way as the thrush family, though provided with but indifferent instruments. When you consider that these crickets and locusts *will* express themselves — will fill the day with song — though they are without vocal organs and must perforce do with legs and wings instead, you must respect them as musicians. It is a distinctly aboriginal music as compared with that of the birds, as tom-toms and pipes are to violins and cellos. And yet it is rhythmic withal and not wanting in sweetness. Contrast these merry crickets with the silent spider. There is no song in the annals of her race. She is unsocial and unmusical like the savage birds of prey. Yet before bees and birds had appeared on the earth there were crickets chirping. Theirs is the most ancient chant of the world — the Song of Sex.

Autumn nights are melodious with a voice, which in the distance is so like that of the hyla of early spring, though softer and more throbbing,

that it is often mistaken for a kind of tree-toad. Heard near at hand it is singularly clear and almost bell-like, though ventriloquial in its elusiveness and difficult to locate, for as you approach, it ceases and is taken up by another a short distance away. Even when standing directly in front of it, it appears to come from several directions. It was only after prowling the woods with a lantern that I discovered the identity of the sweet singer, a small insect of a pale green hue, not over an inch in length, looking like a sort of locust, though classed with the crickets. The translucent wings are of a delicate ivory-white and the antennæ very long.

This cricket was hanging to the edge of a grape leaf when the rays of the lantern fell upon him. He perhaps took it for moonlight, for on a sudden the wings were erected until at right angles to the body, and then, as it were automatically, and with the precision of a pendulum, they moved to and fro, partly crossing their bases and thus scraping the veins of the middle portion — and the mysterious singer of the night stood revealed.

The quality of the tone — the timbre — suggests the sound made by rubbing the rim of a

glass bowl, the horny plate of the wing giving it great resonance. It appears to be pitched to A below middle C, though some may be A sharp or even B. The overtones make it difficult to determine the pitch. The chirping keeps up a good part of the night, and in the wee small hours takes on an uncertain quaver, as if the little singer had fallen asleep and were droning drowsily in its slumbers.

An insect which may be the same one — certainly an allied species — has a day-song somewhat different from this song of the night, a shrilling in place of a chirp. This is made by elevating the wings in the same manner as at night, but instead of rubbing them one across the other in regular time, they are rapidly and continuously vibrated like an electric bell. The rapidity of the vibration raises the pitch, though the quality of the tone is but little different.

There is in this day-song no suggestion of the blistering, feverish shrill of the dog-day cicada, but a far-off dreamy sound. A little before sunset it gradually gives way to that of the night. Day inevitably inspires one song and night another, as if these reacted to bring out two sets of emotions.

And yet there is but one theme: the minstrels sing always of that, but serenade the fair one after one fashion by day and more serenely by the light of the stars. She, having apparently no ears, hears none the less, and perhaps detects variations in this monotonous ditty and even distinguishes the fine quality of some particular voice — some clearness of tone, some pathetic *tremulo* indicative of a cricket's feelings. For is not this a song-festival of all the grasshoppers? I noticed a common short-horned grasshopper stridulating in the sunshine, which he did by taking short flights and rapidly opening and shutting his wings like an accordion. This produced a series of dry, crackling sounds as the wing was scraped against the wing-cover. After thus exhibiting his powers, a female at length came from some little distance and lit beside him, as much as to say, "If you can sing like that I am yours forevermore."

One feels some sympathy with these sweet singers of the fields in knowing what a little life is theirs, how short is the span. For the most part they have but a few months to sport in the sunshine. This epithalamium is at the same time a requiem. In October it rises, a universal threnody, the

death-song of the insects. Over all the land, wasps and bees and butterflies fall like leaves. Death overtakes them on the wing. They lie down to sleep, like travelers lost in the snow.

WILD GARDENS

Improvement easily becomes an affectation, from which all healthy natures suffer periodic reactions that take them to the mountains and the forest, to those primeval estates loved of wild bees, of the phœbe and the wren. One feels a sympathy with those renegade plants known as garden escapes — star of Bethlehem, bouncing-bet, and the rest — which have run away from the garden for the freedom of the woods and highways. The conventionalities of spade and hoe are odious to them. They wander far from the assemblage of the elect; they will live wild and free, these Philistines, following the open road wherever it may lead, with a sort of tramp instinct. Even the staid and domestic apple will break away from the fold to seek the unregenerate society of the pastures.

The hemlock woods, the meadow and the bog are wild gardens which require no cultivating themselves, but only a certain cultivation and appreciation in us, which they repay with gentle

and unfailing interest year after year. What we get from them will depend on what we take to them.

Flowers are nothing away from their haunts. We must have the field in which the clover blossomed — bees and all, the cranberry-bog, the mossy bank of the violet, the white birch on which the polyporus grew. Take, for example, the clintonia, solitary amidst fallen spruce logs on the mountain slope. Imagine it transferred to a trim garden! If you have really seen that flower of the solitudes, you have seen the mossy rock overhanging it, the spruce cones lying thick about; sniffed the balsam and heard the veery on the mountain. Or consider this mountain sheep pasture with its clumps of stunted spruce and balsam, its scattered boulders and patches of sensitive fern, its reddening sorrel and running cinquefoil; bluets lie over the ground like a light fall of snow; pasture stones are incrusted with parmelias and set in a frame of hair-cap moss and reindeer lichens, incomparable mosaics; wild strawberries nestle among dainty speedwells, half hidden under the bent grass. It is a whole, an homogeneous piece of work, like a tapestry. There is not a bog-rush nor a buttercup to be spared.

From the first fragrant spicebush to the last witch-hazel, no cultivated shrub is to be compared with them, for the virtue of the wild is not to be transplanted and is never imprisoned in flower-beds. These shrubs of the pasture have a personality derived from immemorial contact with the virgin and uncultivated soil. They have been nourished by the very juices of earth and by the bone and sinew of the mountains. If you would have the barberry, you must move the pasture itself. It is of wild gardens solely, an untamed and untamable beauty. And so it is with the dogwood, for what is this but sunshine in the May woods — rifts of light breaking here and there through the overarching green of oak and tulip trees? It were as easy to catch sunbeams as to carry this away.

The mountain is the mother of these wild gardens; a vigorous dame to bring forth so gentle a brood — as the slopes of Vesuvius produce a mellow wine which has taken only a kindly warmth from the raging heart of the volcano. All her fairest virtues have blossomed in her children; her graces would remain unsuspected but for them. Let the gods but fling down a bit of rock anywhere and presently, after a few ages, it shall dissolve into

violets and anemones. Grind it to powder by the wayside and you have only made it into thistles and burdock; scatter it over the fields and it becomes daisies and sunflowers.

Imperceptibly, granite melts at its outer edge into a fringe of dicksonia and wild rose. Limestone will bring forth a richer garden than sandstone, as though, like the rock-maple, it had more sweetness in its veins than another. Some of the most delightful gardens arise from disintegrating basalt. Perchance this rock retains a little of its old volcanic heat and has more of the finer graces in its make-up than that which was coldly laid down under water. Fiery lava, tempered and mollified by Time, has become kindly and amenable. Where was only desolation, after countless days the dicentra hangs out its white flags in truce to the warring elements. The sand hillocks of the terminal moraine are the chosen land of mountain laurel, and there are untold acres where this constitutes almost the sole undergrowth. What a hanging garden, when, on a level with the eye, one continuous bloom spreads through the twilight of the woods — the single buds like miniature urns of rose quartz so delicately are they sculptured,—

here a warm rosy tint and there a ghostly pallid blossom. This soil, the detritus of glacial torrents, despite its many washings, has not given up all its gold, but is rich in arbutus and in *pedata* violets. It is, after all, granite, the mother-lode of the earth; granite after endless transmutations but still retaining some of its virtues.

To the first flowers belongs a charm, the most exquisite of any, something tender and appealing, as though they enshrined the fairest virtues of the year — its modesty, its purity, its sweetness — in violets, anemones and bloodroot. This charm, so elusive, has never been described, nor shall be indeed. It is like music which is a language in itself and will bear no translation. The bee must approach these with some humility and more gentleness than is shown to the sturdy blossoms of summer. They are eminently the "gentle race" of flowers, born in the enchanted time.

We go with hungry eyes at this season. By midsummer we have been well feasted and no longer see individual blossoms so much as masses of bloom. Bloodroot and hepatica are like the dewdrops of early morning which disappear before the sun. They can be found just once in a year;

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WILD GARDENS

after that they will not appear the same. It is cheering to come upon such a fair company of spring beauty where but a few days since were none; to enter a stretch of woodland and find it populous with these friends of a lifetime, now returned to their old haunts. We do not commonly reflect that they have been under the snow all the while. Scattered among them, the anemones lie in drifts, like a late flurry of snow and quite as evanescent, lingering in the shadows only. These are the delicate children of April; May is their foster-mother. Contact with them is like the glimpse of a *spirituelle* face. But the adder's-tongue which nestles by the brook has more fire in its veins than the rest. Its spotted leaves give it an almost feline beauty as it droops with the southern languor of the lily.

Serenity dwells with the woodland flowers. There is about them some subtle refinement and exclusiveness. They appear fit symbols of lowliness and modesty. A strip of woodland beside the turnpike is like an ancient chapel left amid the din and hubbub of city streets. The sturdier plants, both coarse and gay, halt at the edge of the wood. Within, the light is subdued; nothing obtrudes

upon the eye or ear. It is obvious that the cathedral had its origin in the forest. What a fair and devout congregation has jack-in-the-pulpit, where the Canada violet stands side by side with the medeola and the painted trillium. The medeola declines its unfertilized flower, so that its maiden life is hid from view beneath the tri-leaved canopy, and only in its mature and matronly days does it begin to ascend and take a position where the seed shall crown the plant and be in evidence. From what insect despoiler is this shy virgin so carefully hid?

It seems as if the light that penetrates these woods has undergone a change, or been deprived of some of its rays, so that the wood flowers are nourished by a finer food than the rest, as with ambrosia. It is perhaps the subdued light which inspires a certain solemn and hymn-like quality in the notes of wood birds, as in the thrushes and the altogether didactic tone of the redeye. There is here none of that self-assertiveness among the flowers that is to be observed among certain groups of plants; the competitive spirit is lacking. Solomon's-seal, bellworts and twisted-stalk, like medeola, are rather at pains to conceal themselves. There is no self-advertising among them. What

could be more unassuming than goldthread and wood-sorrel? They live close to the soil of which they are the offspring — a rich, odorous soil, black with the accumulated nutriment of centuries. He must be in hot haste indeed who treads on a patch of mountain wood-sorrel, such is its mute, appealing beauty. It holds the eye and stays the foot of every saunterer in the woods.

But follow the by-roads in early summer and you shall have very different company. It is here you will find the sturdy travelers, who will go the length of any road in all weathers; and there are none more cheerful and uncomplaining. They have no fault to find; the world suits them very well. You must be prepared to greet mullein and burdock as equals. Here on the road they are as good as any; they hobnob with the rose. Wild carrot borders the dusty lanes with a fringe of lacework — a real lace from the deft hand of Nature. There is no brighter gold than the St.-John's-wort, albeit it will not pass current in the town.

The winds sow the fairest hedge by the roadside — the winds and the birds; it seems that they take kindly to these wayfarers. They are the good fairies who plant elder and blackberry and scatter

the wild rose. Timothy and redtop and witch-grass are the very children of Æolus. The pollen-bearing wind mothers the grass and plantain; the seed-carrying wind distributes the thistle and willow. Birds are very willing to carry cherry-pits provided they may have the cherry for their trouble.

The breeze comes laden with thistle-down, such fragile craft embark on these untried seas with all sails set. The story of such a seed would read like a fairy tale. Has not the wind whispered daily to it as its silken sail was spread? And the seed has tugged at its moorings like any boat till these were loosed and she was off, beating in and out among the high blueberries and shadbushes of the pastures, at last sailing clear of all such reefs and ascending in air to drift out into the open. How it rises and falls on the currents, like a ship riding the long swells of the sea; again it drives free before the wind to settle down at last in some pasture. If, perchance, such a seed fall on stony ground it is no great matter. The marvelous silken sail will now fall away, for the craft has reached port, no more forever to sail these seas. On occasion one is caught in a spider's web, where-

upon the spider comes out to see what luck. Evidently all is not fish that comes to her net. But the self-reliant crane's bill looks neither to bird nor beast nor again to the winds of heaven, for it does its own planting, flinging the seeds away with almost an intelligent and conscious action.

This relation between the wind and the plants of the field is an agreeable stimulus to the imagination, in a matter-of-fact day when fairies are not so common as of old. Consider how the breezes have blown the pollen of the pine and later are to help carry the seed They thus serve the trees of the forest and the grass of the prairie. These same winds urge the fruit that it should leave the parent tree. "Come, follow us!" say they, and first gently draw, then roughly compel, till the apple falls. They whisper all through the summer to the leaves so green, and at length, on October days, draw them irresistibly.

Verily of wild gardens there is no end; our estates are without number. But among them all the mountain is unique, for to ascend is like going northward, and at the same time to reverse the season. One, which I climbed the middle of June, is little more than four thousand feet, and yet,

whereas in the valley there were daisies and wild carrot, on the summit the wild red cherry was just in bloom. In that short distance one walked upward — or rather backward — from the middle of June to late April. Another four thousand feet would have carried one back into the depths of winter. The seasons are thus with us throughout the summer; we have only to go up in the air after them.

Warblers were nesting on the mountain slopes which would otherwise hardly have been found at that season this side of Canada, such as the black-throated blue, the magnolia and myrtle. The winter wren was fairly abundant, and on the very summit a snowbird had her nest. About half way up, the butternuts of the ravine gave way to spruce and balsam. As the ascent continued, mountain-maple and mountain-ash suggested higher latitudes. But what impressed one most was the subtle recession to the early year. The seasons having fairly begun to revolve, it was as though some power were slowly turning them back again.

Some hundred feet or more up the face of an overhanging cliff, a bower of columbines hung out into the grim ravine. They were clustered just

under the brink, gems of the first water in a rude setting. The red blossoms glowed faintly against the bald cliff like rubies set in the walls of a rock temple. From under the roots of the clinging spruce a small stream slid like molten glass over the escarpment above and burst into spray, gently undulating like a fine veil, as it descended to the pool below with the dominant and strenuous song of the waterfall.

Probably honey bees do not leave their mountain meadows for this dim twilight region, though they may possibly become acquainted with these hanging gardens on their way to some bee-tree in the woods. It is left to the wandering bumblebee to fertilize most woodland flowers, and in the case of the columbine, perhaps to the humming-bird. On the same cliff were tufts of the alpine woodsia and dense patches of rock-brake — but these stand in no need of the bee.

When, at some three thousand feet, wood-anemones were blooming, summer slipped gently away and April took its place. It seemed quite natural then to find adder's-tongue and to see wake-robins and bunchberry everywhere. The last part of the ascent might have been through a

swamp, so strong was the suggestion of swamp life. Spagnum grew in places along the trail, and the fern moss was in evidence on the rocks. False hellebore was abundant, and on the very top stood a poison sumac — a typical bog plant. Yet the summit was rocky and covered for the most part with stunted balsam as thickly matted together as a hedge. The mountain pokes its cold head up into the clouds, and is continually refreshed by the dews of heaven. In some unaccountable manner the swamp plants, as if guided by instinct, ascend and find their natural environment at the top.

When I descended, it was to leave spring behind with every step, not again to meet her in that year.

WEEDS

A strange analogy exists between plant life and some aspects of human life. The same stern necessity of the survival of the fittest — physical in one, and in the other mental and spiritual — seems to inhere in both. Among the weeds, competition is the dominant note, as it is in our world. In some higher circles it is sounded faintly, while untold legions of the more delicate plants — like sensitive natures — are driven to the wall, unequal to the struggle.

There are weeds whose ways suggest the arrogant monopoly, and others which recall the parasites of society. The dodder fastens upon its victim and the bindweed throttles the innocent. To withstand the severe competition of pigweed and ragweed, the garden patch requires your energy, plus its own; and the more war is waged upon these, the more does it seem to encourage the purslane, which thrives like a freebooter in this sort of warfare.

One can imagine no more irrepressible rabble than these weeds of the garden. They seem possessed almost of a conscious life, and to push and shove and scramble for place like a hard-headed, thick-skinned, piratical crew. Many of them are immigrants, the riffraff of Europe, who have found their way to our shores, some to become good citizens, and others to remain pestilent anarchists, opposed to the law and order of the kitchen-garden and rebelling against all government by the hoe. Yet how happy are the bob-whites and the tree-sparrows for the poor seeds of the ragweed when the snow lies deep. They repair to these as to an unfailing larder, which may lie between them and starvation at such times. Through some kind providence, the seeds remain into the winter to be shaken down upon the snow. The obnoxious weed of summer rises to the dignity of usefulness and becomes a food plant — grain and corn to the hungry birds.

There are weeds and there are weeds. So much depends upon the point of view; is it a weed on the lawn, or is the lawn but a background for the dandelions which star the grass? What bright day-stars are these which beam upon us from the

orchards and by-roads with cheerful golden radiance! And when these shining stars have grown dim and faded from their firmament of green, there appear in their place such white wraiths of their former selves as resemble the moon seen by the light of day. They are now so many extinct suns, so many ghosts of the dandelions, soon dissolving into still less substantial state, to be spirited away on the winds.

During the summer the common dandelions gradually disappear, and at length the fall dandelions suddenly spring into prominence, poking their flower-heads up on long scapes. With commendable thrift these are closed every night, that a little pollen may not be wet by the dew. These fall flowers appear to be more numerous even than the early species. They can sustain themselves in tall grass where the latter could not, keeping their flower-heads always floating on the rising tide of green. You may see fields of red clover mixed with dandelions, while the Virginia creeper lies in scarlet splendor along stone walls, and goldenrod and asters are massed on the borders — Elysian fields surely. The play of light and color is a kind of music, and stimulates one to some inner

hearing. The deaf could hear this. And were the blind to listen to the crickets' reverie, they might see these fields.

Is there anywhere a more audacious beauty than the pokeweed in autumn? It flaunts itself in your face — one of the respectable *bourgeoisie* of weeds, now suddenly arrayed in this regal fashion and mocking you with its splendid beauty. A weed! Why are not roses weeds as they stand all forlorn before this voluptuous child of the people? Out of the plebeian rabble there comes here and there such a superb creature as this.

Consider the milkweeds,— a family of beauties. Something luxuriant and sensuous there is in their ample proportions. They have an excessive health, an exuberance of vitality; a full-blooded race, if you so much as break a leaf from one it bleeds like a wounded creature. From the mud, the swamp-milkweed has derived some rich hue, while the butterfly-weed in the pasture has caught the very sunshine itself and become a living flame. The great pod of the milkweed is the luxuriant fruit of this fine plant, as tropical in appearance as any mango or cocoa bean. When it is ripe, in place of a luscious flavor, it discloses a mass of

finest silk, a fluffy ball. Who would guess the treasure within these grotesque pods with their long beaks, their spines and wrinkles? They are like curious old junks with a cargo of rich stuffs of the East, which children — young pirates that they are — overhaul on the high seas of the pasture and despoil of their treasure.

It is the sturdy character, if nothing more, of some weeds which constitutes their charm, for health is beautiful everywhere. Ironweed and joe-pye-weed are such lusty, vigorous plants, and burdock and jimson-weed. The earth *shall* nourish them; they push themselves to the front; they do not live by any one's favor. How can the impoverished dust of the roadside sustain these burdocks with their incredible leaves? The richest swamp produces no such extravagant foliage. As for the ironweed, it clothes the pastures with a royal purple, so rich a hue it compels the eye, and is a kind of stimulant. One may become mildly intoxicated with such color.

In August the high-roads and by-roads are painted — stripes of gamboge and patches of delicate blue — and all because of some weeds. It would be worth while riding through the country at

this season, if for no other reason than this. Vivid streaks of tansy stretch in narrow lines for rods together. Where the road skirts a pond, the eye is refreshed by the pickerel-weed, resting like aureoles above the surface of the water. In the fields beyond is the celestial blue of the chicory — so common a weed, so divine a hue; while everywhere a fringe of wild carrot trails in the dust, the lace border of that gorgeous mantle. Such laces and jewels nature provides if you are but rich enough in thought to possess them.

In the pastures mullein and thistle grow side by side, two pronounced personalities, as different as it is possible to be, yet nourished by the same soil and under the same conditions. The mullein seems to invite you to take hold of its leaves, while the thistle as plainly says, Hands off! They suggest similar types of people, one bristling and repellent, the other suave and genial. These great flannel leaves of the mullein are caressing and soft to the touch. Contact with them is agreeable, well nigh soothing. If, perchance, your feelings have been ruffled by a bellicose thistle, address yourself to the tender young leaves of the mullein and you shall feel their soothing effect.

The perfume of the Canada thistle is equal to that of most wild flowers and superior to many. It is wholly refined, with no taint of coarseness. With what vulgar effrontery a cheap perfume assails the nose. But here is a despised thistle which brings itself to notice by an influence not plebeian but patrician. You might pass this thistle day in and day out and never suspect it had any such virtue, till you had gone out of your way to cultivate a closer acquaintance. Call it a weed if you will, it has an individuality that separates it from other common plants, and by reason of which it commands attention.

Floating in nebulous masses about the blackberry thicket, the delicately conspicuous hue of the fireweed catches the eye. If you will but watch the slender pods you may now and again see one suddenly open and its four walls silently withdraw, while there emerges from the interior a phantom shape, the filmy mass of pappus-down with rows of golden seeds attached. This white cloud of silk gradually takes shape, as the mist might rise from a mountain lake, lingers a moment, and then sails away on a passing breeze—ethereal still as the mist—growing less and less,

and vanishing at length, as if resolved again into the invisible.

Old gravelly roads, which meander across the pasture and seem destitute of any special beauty, are often adorned from end to end with the round-leaved spurge, of richest hue, varying from maroon to plum color. This little weed is so unpretentious, so sincerely humble and unassuming, that probably very few ever see it or are aware of its existence. It lies prone upon the earth, where, once it attracts the attention, it is seen to be a beautiful embroidery on the bare ground. Here grows the poverty-grass which on misty days is covered with dewdrops — incrusted with jewels — while more pretentious plants are not decked in any such beautiful array. The mist descends upon the poorest of them all, and makes that resplendent.

In the society of weeds there is this tendency to segregate, quite as in human society. Even the beach has its clique, a curious throng quite distinct from any of the fields, which defy the encroachment of the waves. About these coarse weeds of the beach is something peculiarly in keeping with their environment. The strange spiny fruit of the

orache suggest sculpins, or some sea-shells, while the innumerable erect stems of the spreading houseleek resemble the backbone of fish. Carrying with it its air-sacs and paraphernalia of the sea, the rockweed, which is a "weed" of another world, grows as far up on the land as it can go, while the weeds of the beach approach the water as near as they dare. Here is the frontier, the edge of their world, and one and all would scramble over the border could they sustain life on the other side.

INSECT LORE

Apis the bee, Vespa the wasp, and Arachne the spider — these might properly figure in many a saga. Mighty are the works of the tribes of Apis, while Bombus the bumblebee befriends the pale flowers of the forest as do the winds the pine. Arachne beguiles the fly, for she is a very Medusa; the solitary wasp slays the Gorgon and lays her in the tomb she has prepared, rolling a stone over the entrance; lastly, from the body of the spider springs the race of wasps, like warriors from dragons' teeth in the days of Jason.

From the first flowering shrubs to the last goldenrod there is the hum of industry. The willows, on mild April days, resound with the roar of insect traffic. The bees push in rudely among the bunches of stamens, and the red anthers so neatly and compactly arranged are soon disheveled, the filaments bent by the myriad insect legs which scramble and kick through them. It is everywhere bustle and hurry; all are wrought to a

tense degree. Life is here at a white heat — purposeful, Anglo-Saxon; yet it appears to move without friction. Occasionally a bee visits the meek-looking pistillate shrub near by, which patiently waits while the buzz and din continue uninterrupted across the path.

It is always a mystery just how the honey-bee transfers the pollen to the pollen-basket — even in view of the explanation. It appears to be scraped from one leg to the other, and gradually shifted from fore to aft by a dexterous process until lodged in the proper place, the bee remaining all the time on the wing so that the legs are moved with perfect freedom. Finally it is stowed more neatly and compactly than any pack-mule's load, and the panniers are good to see, rich and yellow as pumpkins glistening in the corn field. Doubtless the bee is careful to keep the balance and not put more in one basket than in the other. Since pollen-grains are of distinct and definite shapes in different plants, is it not possible that the insect, from its near point of view, detects these differences, and in place of so much indistinguishable dust, finds itself handling minute cubes, spheres and variously shaped blocks?

How readily bees are apprised of the blossoming of any flower. On the very instant the dwarf-sumacs open, the place hums with them. Solitary bumblebees continually scout through the woods and discover when the Indian-pipe, the shinleaf, the pipsissewa are in bloom. Only the queen bumblebee can have any memory of these flowers, as the life of the workers is but a season long. Probably they do not communicate the news, but each hunts for itself. With the honey-bees, however, this is the gossip of the hive as much as the state of the crops with farmers: "Meadow sweet is open today!" "Clethra is in bloom!" "The first goldenrod!" Imagine the news circulating like wildfire through the hives. Honey-bees have little time or patience to hunt up solitary and retiring flowers. They want masses of bloom, fields of blossom, having a large work to do — a city to build, a host to feed.

The bumblebee is the good angel of the woodland flowers, the visiting priest — or shall I say priestess — to all outlying parishes, calling at every ledge and gorge and dell where is any colony of blossoms or a lone settler or two. The bee discovers the pale pendent blossoms of the checker-

berry under the leaves and almost prone upon the ground. In order to reach them it sometimes turns on its back upon the hemlock needles as it inserts its tongue in the flower above. In winter when you gather a checkerberry now and then in your walk you shall bestow a thought upon the buzzing priest of Flora who solemnized these nuptials. It visits every flower in the transparent groups of Indian-pipes which push their way up through the leaf mould to stand like an assembly of the pale-sheeted dead, and looks singularly rich and velvety against these stems of alabaster. Here is a botanist who knows the flora well, and takes a tithe from every blossom to which is brought a grain of pollen — the marriage fee. It is hard to believe so willing an agent is unaware of the service; that it fills an office which it does not recognize, while we, the biographers, alone perceive the relation.

Tell me, is there not something heroic in the life of the queen bumblebee? She awakens after her winter sleep, the sole survivor of her race, and bravely goes forth to collect pollen, lay her eggs and become the founder of a new race of workers. There is rude and virile romance in the life of

this bee with its flavor of the forest. She is the queen-mother indeed, no mere figurehead, but strong, capable, self-reliant. Think of her retiring under the moss and leaves at the approach of winter, the last of her race; or, rather, do they all resign themselves to a sleep from which she alone is to awaken. She remains encircled by Cold — as Brunhilde was engirdled with Fire — till the sun shall cross the magic line and awaken the sleeping Amazon.

Today I split open a dead twig of sumac in which the little upholsterer-bee had laid her eggs. From the summit a well or shaft was sunk some ten inches through the central pith. This I cautiously descended by means of a jack-knife and found it partitioned into a dozen cells, in each of which lay a pupa, the pallid sleepers like mummies in their royal tombs awaiting a resurrection.

The cells were lined — upholstered — in silk and partitioned from each other by walls of chips cemented together. In some cases the pupa was being devoured by the minute larvæ of a chalcid fly, and in one cell only the dried skin remained. For that pupa there was to be no resurrection into the life of the bee, but as the cell was opened, out

stepped a tiny chalcid into the light of day, its dapper little person shining blue-black and its minute wings of an iridescent green.

You may see many broken twigs of sumac, elder and blackberry, perforated at the end in evidence that in the cells below are the larvæ of a bee, or perhaps the pupæ wrapped in their transforming slumbers. This sepulcher is sign to the chalcid fly as well. In one such that I opened were several perfect bees, beautiful little green creatures. Immediately they stepped out upon my hand and began dusting and cleaning themselves, but appeared to be troubled by the brightness, and eager to hide. When offered the open end of a tube, such as they had recently come from, they seemed glad to enter. They were not yet fitted for contact with the world of light and preferred to return to the darkness and security of their cells. A spider had concealed herself in a silken room at the mouth of one tube, perhaps seeking this privacy in which to change her skin. When their time had come to emerge, the inmates would naturally have walked into the spider's den, while the light of day appeared beyond, but for a single instant, as a faint glimmer which they were destined never to reach.

However, there is a Theseus for every monster. A spider was one day spinning her web in an outer angle of the veranda, laying the first strands, the scaffolding. Attaching one point she swung out on her line and fixed a second, aided by the breeze. Without the wind she perhaps could not have erected her scaffolding in that place. The morning sunlight caught these first threads, stretched from post to beam, and they gleamed like silver or spun glass. At length a wide space was to be bridged and she swung free at the end of a long strand. The breeze carried her to and fro, far out from under the roof, so that she remained suspended in mid-air.

But other eyes were watching her at her work. As she swung thus, self-possessed and at ease, suddenly a mud-dauber pounced upon her. The silver strand parted in the sunlight, and the spider was carried to the beam above, where the wasp apparently stung her several times. A moment after she rose in air holding the large globular spider, now paralyzed and inert, and sailed away over the tree-tops in the direction of her nest. The victim was to be immured in a sarcophagus of mud together with the egg of the wasp. When the

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INSECT LORE

egg hatched, the larva in this tomb with the body of the spider would find such gruesome state congenial enough — being of the wasps. In this case a spider the less means a wasp the more.

Late one afternoon a spider was constructing her web. She already had her first line stretched between two small shrubs. On this she crossed and recrossed several times, each trip reeling out a new strand from her spinnerets, until she had a stout cable from which the gossamer structure was to depend. From an end of this she dropped to the ground and fastened a thread, then ascended, traversed the cable and dropped lines from the other end to the twigs beneath. All were remarkably taut and firm. By crossing two she now established the center of the web — not the geometric center — and from the overhead cable spun some radii to this point and from this to the lower strand. In an incredibly short time she had lines radiating in all directions from the center like the spokes of a wheel.

She now fairly ran over these spokes paying out the strand as she laid the spiral web upon the gleaming radii. Starting at the center she traveled from left to right, passing the thread through the

claw of one of the last pair of legs. By this means it was held from her as far as possible and quickly attached to each of the radii. A very short time sufficed for her to complete this spiral of perhaps a foot in diameter, and she had only to return over the ground with the final thread, on which are strung the viscid drops.

She paused as if resting, and in that moment a Social wasp descended like a fury and bore her to the ground. The wasp quickly rose holding the spider in her embrace, and returning to the bush suspended herself by one hind claw. Here she held the body of the spider with two pair of legs, and turning it about, as though it were on a spit, bit off some of the head parts with her strong jaws which worked like a pair of shears. So near was I that I could see these jaws meet and sever the thorax, which fell and glanced from a leaf a few inches below with the faintest imaginable sound. The wasp then proceeded to tear open the abdomen. The builder of gossamer bridges, who overcame space and flung her nets to the breeze, was no more. I looked again at the unfinished web and in it struggled a small fly.

In stretching the first strand the spider avails

herself of the wind to some extent. When crossing from one point to another it is by no means necessary she should drop from a height equal to the distance to be crossed; for if the wind is strong enough she has but to descend a little way, and then, as it holds her out at right angles, she pays out the line and so continues moving in mid-air. As soon as she comes in contact with some object she at once attaches her thread. I have more than once observed a spider drop a short distance when there was no breeze to carry her, but by the movement of her body she imparted a slight motion to the line and thus set herself to gyrating until she finally swung across the intervening space.

The spinners of flat webs in the grass are associated with dog-days and with foggy weather, as if they spread their tents only at such times to fold them again and steal away with the appearance of the sun. As a matter of fact these spiders work in clear weather and at different hours of the day, but the web is so fine as to be next to invisible unless covered with moisture, when it at once attracts the eye, like a writing in invisible ink which becomes manifest only under the right conditions.

There are other spiders which become evident only at the approach of winter. It is something to the credit of these small spiders that, being without wings, they should still aspire to fly; whereas the ants, born with wings, are in haste to tear them off. The past year they were so in evidence on the 11th of November that I shall henceforth associate that day with the flight of the Erigone. The weather was cool, but with a suggestion of Indian summer in the air. I first noticed the spiders on top of a hill, for the bare twigs of sumacs were streaming with gossamer threads which shone like silver. From time to time little spiders descended from the upper regions and ran about over my coat. One, which was spinning threads on my sleeve, finally ran out upon my hand and, elevating its spinnerets, began paying out a line, which I could see as I held it against the sun. When this had reached a length of several feet the little spider was whisked off by the breeze and carried away.

Toward sunset a delicate network of gossamer threads covered the open pastures like a silver mesh in which the earth lay captive. These minute spiders have a way at this time of allowing

the strands to be drawn from their spinnerets by the wind, until they carry sail enough to be lifted off their feet. They fly away thus on the wings of the winds, perhaps carried high above the earth by ascending currents. Lo, the hegira of the spiders!

It would appear that the Solitary wasps are more ingenious and self-reliant, and less governed by tradition, than the Social bees and wasps; for I have seen a small black one which was unable to rise on the wing with the large spider it was carrying, finally drag it up the trunk of an oak to the height of seven feet and from that vantage fly away. Such an one pulled a spider much larger than herself up on my knee and left it there, paralyzed but alive, while she made explorations, after which she returned and took it away. As I was making some notes at the time with reference to wasps, the incident made a pleasant impression, quite as though she had taken me into her confidence and had gone out of her way to reveal some facts of her life.

One day I encountered a sand-wasp which had just stung a wireworm and was dragging it over the ground. The worm, which resembled a brown

twig, was three inches long and as large around as a slate-pencil, while the wasp was not over an inch and a quarter in length and very slender. Seizing the victim in her jaws and straddling it, the wasp walked along in this uncomfortable fashion, over ground strewn with pebbles and partly covered with brush. Difficulties were many, and she was kept constantly pulling, tugging and boosting to get the worm along.

At length she penetrated the brush and came out bearing the worm into an open gravelly space. Here she turned off sharply for a distance of two yards, and, after running nervously to and fro, stopped in front of a small hole. She had been over an hour dragging the worm. During that time one main direction had been followed, though never had she to my knowledge left her burden and risen above the brush and trees to get her bearings; yet she found her way unerringly, and only turned aside because of the boulders and clumps of white birch stumps. The whole distance was about forty feet in a straight line, but further as the wasp had gone.

Backing into the hole, she seized the worm and attempted to drag it in after her, but the entrance

proved too small. She therefore came out and began rapidly enlarging it by seizing bits of gravel with her jaws and fore legs, rising in the air and carrying them off six or eight inches. Again she entered, and this time was able to pull the worm in after her. She remained three or four minutes in the hole, during which time she was depositing her eggs, then her head reappeared at the opening.

She now began filling in. Dropping two or more bits of gravel, she would then turn her back and rapidly scratch in dirt with her fore legs, evidently to fill up the interstices. Twice she took out a bit of gravel and carried it away, precisely as a mason might throw aside a stone that was not the right shape or size. As her head was thus inserted in the hole a black ant approached and peered into the depths. Suddenly the wasp turned and gave one look, whereupon the ant fled in haste.

When the hole was filled to the brim she tamped it down with her head. This occupied her some minutes and she appeared to take the utmost care. Gravel was then brought and piled upon the spot until it exactly resembled its surroundings. The stones carried varied in size from

those as large as a buckshot to some the size of a marrowfat pea. They were lifted and carried seemingly without effort, and dropped almost before one could see what she was about. Twenty minutes were consumed in filling up the hole and restoring the surface.

On a sudden she vanished, and with her vanished the place itself where she had been at work. It was as if a trap-door had closed, and no sign was left. So carefully had she done her work and so closely imitated the surroundings, like a miser burying his gold, it was only after careful search I could again locate the spot.

Thus in the economy of Nature every insect appears to be food for some other. On the leaves of the Virginia creeper you may usually find, in early autumn, some caterpillars which have received the eggs of a small chalcid fly. These caterpillars, otherwise so large and green and awesome to the beholder, have become limp and lean and have an aged and decrepit look. They hold feebly to the vine but no longer eat anything. I brought home one of them and in a short time there emerged from its body a great number of small white grubs, fifty or more by actual count.

Upon the back of their emaciated host they proceeded to spin for themselves marvelous little cocoons of white silk which they did in a very brief time. Moving their heads this way and that they spun the fine threads about themselves until they were completely enveloped. Here were a great number of little spinners, making for themselves garments of silk, and at last spinning themselves out of sight. The caterpillar now bristled with the small white cocoons which stood upon end on its back, where they were attached, and almost hid it from view.

The wary caterpillar has many foes. If it escapes the hungry warblers and vireos, there is still the army of goggle-eyed wasps and nervous ichneumons to circumvent. Yet a prodigious number survive. Were it not for their enemies they would overrun the earth. The butterflies sporting in the sunshine, and the small moths flitting about the lamp, have come through many perils, and may almost be said to have lived by their wits, so astonishing are the ruses they have devised to deceive their pursuers.

THE WAYS OF THE ANT

If you would see the ants to advantage — to your own, that is — you must turn over a pasture stone under which one of the species of small yellow ants has its nest. By thus gently removing the roof, if it is a good-sized stone, the whole colony will be in view at once. The red-ant hill presents difficulties. To dig into it or to pull it apart is quite useless, as the earth falls in and nothing is to be seen but a struggling heap of dusty and indignant ants. It rarely happens that such a hill may be built around a small boulder. If this boulder is suddenly and deftly removed, not dragged or rolled aside, but lifted clear of the hill so that the sides of the nest may not be broken in, a remarkable scene is disclosed.

I have found such an ant hill, and by removing the stone the household was placed on exhibition — but not all its secrets revealed by any means. From several large chambers, now roofless, galleries and corridors radiated in all directions. The instant

the stone was lifted the ants swarmed from the galleries into these chambers, which were packed with the large cocoons. There were thousands of pupæ, of a delicate brown tint, looking wonderfully clean and fresh, but with such celerity did the ants work that inside of ten minutes all were carried from view.

Among the rest were perhaps a dozen young ants, the head and thorax being white and the abdomen a pale mauve. These creatures moved feebly about, taking no interest in the proceedings, and were for the most part seized by the workers and conveyed into the galleries. Apparently they were individuals that had just emerged from their pupa-cases.

Under another large stone were two very numerous colonies living side by side, of different species. The nests were, of course, entirely separate and under opposite ends of the stone. The smaller of the two appeared to be stinging ants, for they clustered in great numbers over their small pupæ, elevating their abdomens in a threatening manner like so many diminutive scorpions. The other species were large and active ants of a polished bronze hue. Their pupæ were naked,

which gave the nest the appearance of being filled with grains of rice.

These large ants set to work with frenzied activity and removed all of their own pupæ. Then, and not until then, they swarmed over into the adjoining nest and began carrying the cocoons of the small ants back into their own nest. Now and then some small ant bolder than the rest would resist, and an individual combat ensued which ended by the large ant carrying off her small antagonist. There was, however, very little resistance of this sort, and the pillage, if such it were, continued until the remaining cocoons had all been carried over into the nest of the large ants. So few of the small ants made any resistance that it gave one the agreeable impression the larger ants were only offering assistance. But I failed to find on subsequent visits that they had returned the pupæ. And although they daily brought their own pupæ out of the galleries, the smaller cocoons never more came to view, and the small ants subsequently abandoned their nest. Thereafter I felt some compunction in thus disturbing a whole community for mere curiosity.

It is noticeable above all how the ants at such

times take no thought for their own safety, but for that of their charge solely. Whether their interest is in any sense maternal or merely a property interest does not appear. Another feature evident in disturbing a formicary is the general harmony in which the individuals of any one colony work together. Here is no less than a catastrophe, as if the roof of one's house were suddenly to be removed and everything upset. And yet not one runs away or apparently conflicts with any other. There are no cross purposes; no two get in each other's way; but animated by a common motive, and by one only, the community proceeds with despatch to the work in hand.

Is this socialism among ants something preordained for them as the condition of their life, or is it in part an acquired tendency of the ants themselves? That they *do* acquire tendencies would seem clear enough. If it should be proven that this social state is in fact the result of an evolution among them, it would be one of the most significant facts of natural history.

It serves the community admirably at any rate. But with them the individual does not count. Ants are ahead of us in one respect in that they have

order without coercion. There is such harmony, such co-operation among them, they have evolved no ruling class, the queens being such only in name and more properly the mother ants. The life of the community is all, and every one looks out for it.

On warm afternoons early in September you may look for the swarming of the queens, when myriads of ants sail into the air in their desultory marriage flight. In apparently endless succession they pass, every now and then one alighting, whereupon begins the curious part of the performance, for they run rapidly about, throwing themselves upon their backs to squirm from side to side after the manner of a dog scratching. They then get upon all sixes and continue running to and fro. After these contortions the wings wear a most disheveled appearance, and, as the process continues, become more and more crumpled, until at length one or more are missing.

Sometimes in sheer desperation an ant will lie on her back and revolve rapidly in this position. In some cases the wings seem to resist all attempts to remove them and the ants redouble their efforts. Their frenzy appears to know no bounds; they fairly stand on their heads and repeatedly fall over

miniature precipices and into Lilliputian crevices in their blind determination to tear off the wings. Again they seem to use their legs as though trying to twist off a wing. It is the most fanatical performance to be witnessed among insects.

Such dogged persistence must sooner or later attain its end, and presently the ant is seen running about wingless or perhaps with only a torn stub left. The behavior is no longer frantic as before, but she now moves about as if enjoying great relief. During one such flight great numbers came down into a gravelly path through a huckleberry patch. They apparently avoided the bushes on either hand, and chose to alight in the path, for it was alive with ants twisting and turning and wriggling upon their backs in the gravel. Others, having gotten rid of their wings, were attempting to go head foremost into the ground, possibly with a view of laying their eggs, or merely because the soil was their natural element.

Around the formicary itself the workers were grouped *en masse*, endeavoring either to restrain the new brood of queens in the old colony or to coerce them into leaving. They appeared to drive them as a squad of police might force back a

crowd. But it is manifestly difficult to interpret their motives with any assurance, and it is more likely they were provoking them to flight. At such times they ascend the branches of a bush and collect in excited little groups on the buds and flowers around the females, as if determined they should go. No doubt it is an exciting day with them, a sort of Labor Day demonstration. In this case it is the womenfolk who are thus bent on asserting their rights and doing as they will. But why, having once ascended into the larger world and the liberty of winged creatures, must they insist on tearing off this means of freedom to become crawling, laborious insects? They appear to hear two calls, one from above and the other of the earth, earthy, and to obey the latter. But it is with them the race and the future — always the future.

To an ant a tree is a forest in itself. Ascending its mammoth trunk to the upper regions, she follows the great highways of the branches, out into the unknown and trackless wilderness of leaves in pursuit of her game — the aphid. She knows well in what wild and solitary uplands to look for this mountain-goat.

The under side of maple leaves affords good pasturage to numerous green aphids which there browse contentedly in the pleasant shade and under the watchful eyes of the small brown ants that herd them. The aphids are all sizes and ages, though as to age the difference is probably but a few days. With a glass, the process of "milking" may be observed, the ants merely stroking the aphids with their antennæ. Two small tubes, like sap quills, protrude from the back of the aphid, and from time to time minute glistening drops are seen to exude from these tubes and are removed by the ants in attendance. Surely, to the ant here is the land of milk and honey. They move constantly to and fro among the aphids, now and then stopping to stroke one. Apparently they detect by some signs which are ready to yield the sweet fluid. Their presence appears to be agreeable to the aphids and is never in the least resented. After long watching with the glass, I have never seen anything akin to insubordination. Pluck the leaf ever so gently and hold it in a proper position, the difference is at once apparent to the aphids, for there begins an exodus, and large and small troop up the stem of the leaf and so on to

whatsoever it may be attached; nor does it cease until they have deserted to the last one.

But the life of ants is by no means given over to these bucolic pursuits. While the meadow-ants seem to be in the pastoral stage, the red species and the large black ones are hunters and warriors. The most sanguinary conflict I have witnessed was a battle of the ants. Two armies of the same black species met on the floor of a neighbor's barn. The battle lasted throughout several days, and both sides fought with indescribable ferocity. Where they came from was a mystery, as no such colonies of ants had ever been seen thereabouts.

They appeared to be of the species *Formica pennsylvanica* which nests in trees, but these do not occur in very large colonies, whereas the contending hosts upon the barn floor were as the Tartar hordes. The floor was strewn with struggling pairs and with the dead and injured, and always fresh forces were arriving.

The persistence with which they fought is only to be compared to that of bulldogs, while they showed the ferocity of weasels. Once let an ant get another by the thorax and she would continue

crunching and sawing until she had severed the head, notwithstanding in the meantime one or several of her own legs had been cut off by her antagonist. This was the usual outcome of the various individual combats.

From time to time I placed pairs of combatants on the slide of a dissecting lens, and through the glass observed them as in an arena. It was a miniature combat of gladiators, but with no appeal for mercy on the part of the vanquished. Much evidently depended on the best hold, as in wrestling, for there was no dislodging an ant once she had secured it. Under the lens the comparatively great strength and the skill and relentless ferocity of these miniature warriors became more evident and was astonishing to witness.

A bird's-eye view of the battle-field revealed no plan of action nor any directing genius. It was every one for himself — or rather herself — but there was absolute unity of purpose. Occasionally some could be seen running about with the heads of the vanquished suspended on their antennæ, whereon the jaws had closed in the death-struggle, not again to be relaxed. These ants appeared to seek no relief from such a monstrous encumbrance,

nor seemingly was any offered by their comrades. Others were crawling on an uneven number of legs in search of new foes. The cause of such a conflict among ants of the same species remains a mystery — one of the many mysteries.

Every year the red ants raid the common blacks for the purpose of making slaves — a most high-handed proceeding. This season I came upon the invading host marching up the road about ten in the morning of July 28th. The invasion had but lately begun, as the ants were carrying no pupæ; it was the skirmish line. As the column advanced, frequent and rapid communication took place between individuals and stragglers who were coming back. Later, when the raid was well under way, there was little of this. The nest of the red ants was by the side of a path in the woods which led out to the wagon road, while the negroes were domiciled some distance up this lane. Now the column of red ants followed the path and the road the entire way, in place of going directly through the bushes, though it doubled the distance, which thus amounted to some fifty yards.

Red ants were soon pouring out of the various openings in the nest of the blacks, carrying both

pupæ and larvæ, and rarely one passed with a bunch of small white eggs. Several black queens came out of the nest, and as they emerged were set upon by red ants, which tried to hold them by their wings. They managed, however, to throw off their assailants, and ran under my feet, where they were followed by a score of black workers, all of whom crowded under the soles of my shoes as I stood on the loose gravel. At noon I timed the ants and found that, on the average, forty pupæ and larvæ were carried past a given point every minute. Two unbroken columns now extended the entire distance between the nests, one advancing and the other returning.

Occasionally one passed carrying a portion of a black ant, a head and thorax, or an abdomen. Again, one would appear with a live black, which, when liberated by me, frantically made her escape. Very young negroes when carried off were never injured. On one occasion several red ants were struggling with a black, and among them was a black who fought against her own friend. This is the only case in which I saw a black ant help the enemy in this way — a traitor, evidently, but presumably one whose pupa had been captured

the year before and reared in slavery. Whereas the red ants always came to each other's assistance, the blacks rarely did so.

By five o'clock the raid was practically over for the day. It ceased as suddenly as it had begun. Early in the struggle a slender, straggling column had diverged from the main line, about half way between the nests. I now found the entire body of ants moving in this new direction. The one raid over, they had undertaken another upon a colony of blacks some twenty-five yards distant, and were transporting the pupæ and larvæ at about the same rate as before. To reach this nest, the column must cross the wagon road, and here a number were crushed from time to time by passing vehicles. But the marching army passed by with the stolen pupæ and paid no heed to their wounded comrades. This second foray ceased before nightfall.

The following morning by ten o'clock the raid had been renewed and a great stream of ants were bearing away pupæ as before. Whenever the column moved over dry leaves its progress was distinctly audible, a rustling sound suggesting the curiously dry *crik crik* of a serpent. The footfall

of the ants was as incessant as the patter of rain; a barefooted insect host, a rabble of *sans culottes*, and the sound of their marching feet reached my listening ears, as it were in the clouds above them.

On the fourth day the slavers began kidnapping the blacks themselves and carrying them unharmed to the nest. Quite often I found them carrying individuals of their own species. These may have been deserters or they may have been ants from some other community, who, learning of the raid, thought to be present at the final sack and perhaps share in the spoils. A still more puzzling thing was the fact that some few red ants bore negroes in the wrong direction,—that is, from the red back to the black colony. I have noticed on former occasions that the raid may become thus complicated toward its close as if the ants, drunk with victory, were beside themselves.

On the 7th of August the raid was directed against a new negro colony some distance further down the road. It was carried on with something like the usual vigor until the 25th of the month, when it apparently ceased. The first nests of blacks, in which some few ants remained, were no longer molested, though the besieging army

passed them on its way to the field of operation. Thus the series of raids of this one colony of red ants continued for nearly a month.

I found no less than three other raids in progress at this time, among widely separated communities, so that the marauding spirit was contagious among them and spread like the war fever. The red warriors were everywhere in arms and bent on pillage. One hill, being free from grass, offered a clear view of what was going on at the doorway at least. Here the black workers — the slaves of a former raid — were carrying out bits of gravel, while the train of red ants entered, bearing the stolen pupæ from the pillaged nest. The red ants were at this time bringing some large queen pupæ which they had great difficulty in getting over the ground. As they approached the entrance, the black workers deposited their bits of gravel and ran to their assistance. Several blacks which remained near the entrance seemed to act thus as porters, while others about the top of the hill were engaged as laborers.

Stopping work at about five o'clock, the train of red ants melted away before one's eyes. They dropped their task very much as a gang of men

do when the whistle blows. Their day at that sort of labor was therefore only about seven or eight hours, as if some of the principles of Labor Union were in vogue among these brigands. They would kidnap only so many hours a day. The slaves, however, kept at work until dusk. Perhaps the red ants continued inside the nest, disposing of the pupæ captured during the day, but they brought in none after five o'clock.

Three days had elapsed from the close of this raid when, for some reason, the entire colony of red ants deserted the hill, carrying the newly captured slaves and their pupæ with them. They took up their abode under a cement walk, an unusual place for red ants, and a week of incessant labor was consumed in carrying the black ants and pupæ to the new site. This was, then, a *bona fide* exodus of an entire community.

Under the cement walk to which the colony of red ants had migrated with their slaves were numerous nests of small brown ants. These swarmed one sultry afternoon, and as they came pouring out of the cracks in the walk and clustered on the surface, the fierce red ants fell upon them with fury, slaying hundreds and leaving most of the

bodies on the walk, though many were carried away. This I took to be a veritable hunting expedition. Like some other "sportsmen," they appeared to kill more than they wanted, and the little heaps of winged dead were left to be scattered by a gust of wind.

On the following day a new chapter opened in the history of this remarkable colony, for I found them attacking a large negro colony some distance away. Contrary to custom, the blacks defended their nests with spirit, and at first seemed to hold their own. Not divining what was to follow, I was surprised to find the red ants carrying away no pupæ. But the next day it was made plain enough, for the red ants appeared in a compact column bearing pupæ and slaves, which but a week before they had deposited under the walk, and which they were now moving for the third time. Was this a second exodus or had the move to the walk been merely an expedient until they should find a more suitable place? Without further ado they invaded the nest, and four distinct colonies (the red ants held slaves of a previous year), one red and three black, with all larvæ and pupæ and some eggs, were thus housed together. One may

imagine the feelings of the unfortunate community on finding not only an invading army of free-booters, but that some thousands of their own cousins, children and all, were come bag and baggage to live with them.

Now the marching column passed close by the nests of the little brown ants which had been their hunting-ground of the few past days. They were too engrossed in carrying pupæ to follow the chase, but I found three of their slaves posted by some small holes in the cement through which the brown ants left their nests. These negroes remained near the opening, and, as the brown ants appeared, would reach over the edge and pull one forth which was soon crushed and tossed aside. During the several hours that I watched them the three slaves remained so engaged. From time to time they would run about among the wounded, and picking up one here or there, apparently give it a nip.

This final move occupied some eight days, and nothing further transpired in the history of this colony,—that is, above ground. The war fever subsided as suddenly as it had arisen, and the erstwhile warriors were perhaps become peaceful

educators of the slaves now being born into captivity with only some vague instinct of freedom, some race memory handed down from the halcyon days before the advent of the red Tartar.

If the sluggard is to go to the ant, then let it not be to the red ant, nor again to the slave, but to some Syrian species known to Solomon, which stored up provender for the winter, or to the little brown ant which herds the aphid. Huber relates that he found the slave-making ant of Europe (*P. rufescens*) unable to feed itself, so that, if isolated, it would miserably starve in the midst of plenty. Not to such an ant, then, should the sluggard go, but to that wise yellow species which, declares Lubbock, actually brought in and cared for the eggs of an aphid through the winter, and carried out the young aphids in the spring to their proper food plant. Certainly should we ever attain to the dignity of wings, there will be no occasion to emulate the ant, which, being born into that freedom, tears them from its body, the rest of its days to crawl upon the earth.

AUTUMN STUDIES

Early in August we are surprised each year by the glowing leaves on the tupelo, a little patch of scarlet gleaming in the swamp, while the high blueberry is still in fruit and the silver-rod is making its appearance. By the time the wood-lilies have faded in the huckleberry pasture, the red bunchberries add their bit of color to the carpet on the edge of the swamp. The large berries of the clintonia turn that rare shade of blue which they retain but a short time, growing darker as they ripen. This delicate bloom appears later on the berries of the smilax, the frost-grapes, the savin and the viburnums; but in the clintonia there is an admixture of some tint lacking in these, which gives a finer blue, as though there were reflected here some remoter depths of the heavens, a bit of ethereal and celestial color imprisoned for a moment. Mountain-holly is now in its prime, its berries of a deep cherry, perhaps one of the richest reds to be found in nature, as those of the

clintonia present one of the rarest blues, equaled only by gentians and bluebirds. Both berries, of course, wear their true colors only in their prime and lose them on becoming overripe. In the swamps the little yellow and brown cyperus is in flower and the leaves of the small, pale St.-John's-wort have reddened to a brilliant hue, while young bullfrogs and pickerel-frogs sun themselves on the lily-pads and dream away the mellow hours.

While the dog-days are disappointing in respect to bird life, there are compensations. The charm of this season lies in the mushrooms. Though these last through October, they are more in evidence in August, and take on prominence then because of a diminishing flora and the withdrawal from view of a large number of birds. It is a second spring — hot, moist and fungus — a blooming of the mushroom world. Old stumps and dead branches blossom gaily, and bring forth a tropic flora. Decay is seen to be the matrix of beauty. The logs of corduroy roads through the swamp are incrusted with a shelf fungus (*P. versicolor*) of marvelous hues. These, spread like open fans, are fastened to the wood by the pileus itself, as by the handle. Some are banded in seal-brown and amber,

the surface having the lustrous, changeful effects of a cat's eye. Others are striped in violet and deep green; still others in green and mauve, and some in ochre and tawny hues, while over all there is a play of light as on watered silk.

It requires somewhat of the heroic spirit to discover whether a mushroom is edible or not. But we may feast our eyes on the amanita, and all other mushrooms, with no fear of consequences. The mycologist seems to overlook the finer and esthetic value of mushrooms. They are beautiful to look upon — surely this is one important qualification. What more attractive these misty days than the deadly amanita — the "destroying angel"? How it gleams in the woods! How it lures with its terrible beauty! But they who are tempted to taste must be wholly given over to the pleasures of the table. It was not made for the stomach, but to be digested and assimilated by mental processes alone and the perception of beauty thereby nourished and sustained.

How clean and wholesome is the pasture mushroom — *the* mushroom — with its white flesh, pink gills, and cap from which the skin peels as readily as from a fig. The same field is often sprinkled

over with puffballs looking as fresh as new-laid eggs, as they poke out of the close-cropped turf. Some species are thus eminently wholesome and inviting, while others have a loathsome fungoid personality and affect one like the sight of reptiles. They express the fact that they are of the *lower orders* — the slimy world. Mushrooms are indeed almost as varied in outline and color as flowers. Red species of russula vie with the rose, with ripe cherries, or the cheeks of Bartlett pears, while the green russula is of richer, more velvety hue than any unripe fruit. The grotesque forms of boleti have a kind of fascination. One comes to distinguish minute differences and to cherish these odd and sometimes graceful shapes, as a connoisseur might his bronzes or antique vases.

Many of the mosses are fruiting at this season, but they, for the most part, belong to that mysterious and unfathomable world of the compound microscope. Yet here are some, be it said with joy, that so proclaim themselves as to be known of all men. Such we can take home to us as friends of our leisure and landmarks in our excursions. These at least we have reclaimed from science. In the shadowy sea of Latin names these

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AUTUMN STUDIES

few green isles appear — peat-moss, broom-moss, hair-cap and fern-moss. Like miniature smilax are the mniums, marvelous little trailing beauties, while of all vegetable elves the silvery bryum has the greatest witchery, with young drooping pea-green capsules like so many fairy pipes. A miniature jungle is the fern-moss, a forest of tree ferns at our very doors — Ceylon and Java in our wood lot. It is only a difference of dimension. A patch of this is as rich and luxuriant as any jungle of bamboos on the lower slope of the Himalaya, and a spider might as easily lose himself in one as a man in the other.

With what a fine garment of green does Nature clothe the trunks of swamp-maples and some black birches. It is a true woodland costume befitting their sylvan life; a snug garment tightly wrapped about the trunk as though to protect the vital parts of the body while the extremities are bared to the winds. Woven in woodland looms of mosses and lichens, it forever replenishes itself, the holes mended and the bare spots renewed as by deft and invisible weavers.

Where do the birds go in August? Never an oriole's note nor a bluebird's warble. All the

more we appreciate the faithful redeye and the wood-pewee. The importunate twittering of young birds with their speckled breasts and half-grown tails is in evidence; they at least do not hesitate to make themselves known. But in September are bright days when there come waves of birds. The returning warblers rove in little bands, and companies of young field- and chipping-sparrows flit in and out among the bayberries and alight in the path.

In their dull, autumn colors the warblers have an unfamiliar look. They come disguised in winter cloaks which, if you do not know their little mannerisms, may be effective enough. With provoking celerity they flit in and out the thick foliage, and you dance attendance; now this way and now that, stumbling over pasture stones or plunging into the midst of blackberry and rose thickets, to be detained at last by the persuasive catbrier. Again you go forth to find the game has stolen away and not a warbler is to be seen. Such are the exigencies of bird study in September; yet in a few days other flocks may arrive. Every faintest clue is valuable to the ornithologist who honestly refrains from the gun. Were it not for

the peculiar jerking of the tail, one would hardly recognize the yellowpoll in his dull suit. The fly-catchers frequently declare their identity through mannerisms. Were it not for difference of manner and voice, the phœbe and the pewee might easily be confused; so also the redeye and the warbling vireo. I have known the redeye for years, but can never make out his *red* eye, unless it be a glass one.

Now comes the winter wren, peeping and prying round about a mossy tussock like a little mouse, but far more self-contained. His wee tail is elevated and his whole demeanor pert. What a picture he makes, prying about in the hair-caps, his head little higher than the capsules,—a ruddy, rich-hued, speckled little fellow. If only he would give us a measure of that fabled song, that Orphean strain of the far North and of the mountain tops, which is denied to dwellers on these lower levels! There are songs to be heard only on Parnassus.

These are the days of journeying seeds. In spring it was blowing pollen; in early autumn, mushroom spores; and now winged seeds flying before the wind. Those of the hop-hornbeam are done up in little papery bags which, though

incapable of an extended flight, manage to sail out and away from the parent tree. Even the small seeds of birch and alder, compact as they are, have wings provided,—for no ambitious flight, to be sure, but a gentle excursion only, such as the broad-winged maple seed may take when its hour arrives. Acorns will fall directly below the tree, perhaps roll some little distance on uneven ground and lie in rich confusion—a symbol of plenty. For any further transportation they must depend upon the wings of the jay and the feet of the squirrel. In this respect the sweet acorns of the white oak have the better chance, while at the same time they run the greater risk of being eaten. Jays constantly carry acorns, and may frequently drop them. Gray squirrels bury them, and recover a surprising number later when the snow is on the ground. They know wherein the white are superior and are as well informed about acorns as are we about apples or the varieties of squash. The white oak acorn is to them Hubbard squash or Baldwin apple.

When Nature planned that the nut trees should bear as they do, she doubtless considered the squirrel and the boy that was to be. She had

no idea of deriving a thousand seedlings from a hickory, but perhaps one only, and allowing for those that should come to naught, the boys and the squirrels might have the rest — to say nothing of weevils, which get ahead of both when it comes to chestnuts, being on hand to lay their eggs in the flower. When the boy arrives, it is to find them already in possession — surely nine-tenths of the law in this case. The chestnut-bur was seemingly designed as a means of protection rather than of transportation,— unless it be that in remote times the tertiary monkey got them in his coat, or perhaps slyly pelted the mastodon with these monster burs, and they were thus conveyed, as now a dog will carry beggar-ticks. As a protection it does not serve against its most insidious foe, the larva of the weevil, which works not from without but from within. Nature has treated the butternut better by surrounding it with a husk, as food for the grubs, which are content to go no deeper. One is a case of armed resistance, the other of diplomacy, and diplomacy wins.

How evidently all Nature is flowing. It is as though we stood on the banks of a river and saw pass — today arbutus, tomorrow, columbines, and

later, goldenrod. The last is hardly gone before the advance guard of skunk-cabbage appears again. Autumn nourishes a vigorous brood — whole acres of wild sunflowers, acres again of joepye-weed, and salt marshes aglow with the great rose-mallow. Presently there will be only asters and goldenrod — everywhere purple and gold; royal robes worn not for long, to give way to the sober dress of early winter — a monk's garb.

Early in September the common brakes turn, imparting a faint glow to the woods. Dicksonia has a brighter hue, and patches surrounding a pasture boulder fairly seem to emit light. But this is as nothing to the splendor of cinnamon-ferns in the open bogs, now dry, and the spagnum withered and sear. It is as if the smouldering earth-fires leapt at the touch of autumn and glowed in these stately fronds. In the woods is always a predominance of yellow at this season; so lately somber and damp, heavy with the mustiness and humidity of the dog-days, they are now full of imprisoned sunshine. As by a touch of enchantment, the falling of the lower leaves on all shrubbery and in brier thickets has suddenly given us distances, larger perspective and new vistas, where before we were

hedged in between dense green walls. Aspen, shadbush, blackberry, birch and hickory all incline to yellow, mottled and speckled more or less with brown. Ochre, umber, sienna, gamboge are on Nature's palette; soon she will replace these with crimson and scarlet. Already there is a touch of vermilion in the brilliant poison-ivy; and she has spilled drops of scarlet everywhere on the outskirts of the woods, along a wall, over a fence, up in a pine, in the very midst of a radiant gleaming hickory — wherever the Virginia creeper grows.

Nature works deftly, at first with delicate brush touching a shadbush, a clump of osmunda, or again only a leaf, a spot of color, a patch here and a streak there; but the day of transfiguration approaches. Early October sees the stag-horn sumacs fairly scintillate with color. At last the whole color-box is upset and runs red down a hillside huckleberry patch, meeting a yellow streak in a ravine and spreading out over the swamps, a sea of scarlet and gold. Every year Nature starts out in this modest fashion and ends in an upset and riot of color. We should know her ways by this time, but though her plan is the same she varies the details infinitely and there are always surprises.

These same earth-fires which blazed in the osmunda now glow deep red in the dwarf sumacs — a dull, fierce flame, as if for the nonce Pluto's fires shone through the thin shell of earth. The poison-ivy is in its glory, and no tupelo, no sugar-maple, can rival its scarlet and vermilion. Earth indeed wears a jewel now. But there is nowhere a warmer, mellower tint than the shadbush has caught and held,— not brilliant nor showy, not a shining mark in the woods, but a cheery sight that warms the cockles of your heart. Little clumps of the maple-leaved viburnum are now of a delicate smoky pink, while the ash turns an indescribable hue — a greenish maroon or purplish green if such there be.

Already the hickory leaves are falling, detaching themselves one by one and floating leisurely to earth. It will now be our gentle pleasure to walk through crisp and rustling leaves. Barberries are ripe, and old-fashioned folk gather them for jelly or preserve them in molasses, wherein they are as so many shoe-pegs drowned in sweetness. The solitary sandpiper comes again to preside briefly over the ponds — a lone, wild spirit. Little flocks of coots scud low over the water, and in the dark,

spongy humus of the hemlock swamp, red squirrels are digging caches and concealing the small cones, a dozen or more in a place. Such are the signs of the times.

Yet another sign — the last effort of the dying year — is the witch-hazel, which sheds its leaves and stands arrayed in yellow blossoms. A brave suggestion is this flower of the late autumn, blossoming when all else is in the sear and yellow, that it may bear seed in another year. When all others have given up and are retreating, this one comes forth as much as to say it is never too late. There is a very witchery in the crinkled yellow flower born of the old year in a frosty world; a borean child brought hither on the wings of the North wind; a sturdy blossom that will not show itself till it hears the music of rustling leaves.

Late in autumn the white pines shed their needles and lay down a new carpet. No turning of the old here, but every year another — fresh, wholesome, fragrant; a plain, well-wearing groundwork that never offends the eye and on which is traced from time to time a rare and original design. It is now a scarlet tupelo or a maple leaf dropped here and there, and again a creeping

mitchella with a red berry or two, or a clump of ground-pine and a drift of beech and scarlet oak leaves. On occasion appears a solitary gleaming amanita. Over the rich seal-brown of ancient hemlock stumps is a tracery of the gray-green cladonia with its scarlet fruiting cups. What are Tabriz, Daghestan, Bokhara and the rest to this? These odorous pine-needles are the magic carpet which gently conveys one into the sylvan world of faun and nymph. Now it is a sunbath we want rather than a cold dip,—to bask in the warmth like any cottontail. To lie in some sheltered spot while the frost is taking off the last leaves, and become saturated with sunlight, is a mellowing process, and ripens one,—as tomatoes are ripened on the window-sill or grapes on the trellis.

As the vivid hues of the red maple fade in the swamp and are replaced by the soft silvery gray and purplish sheen of the bark, the oaks on the hillside become ruddy. The coloring is rich and subdued, rather than brilliant and glowing as at first—mahogany and maroon set off by the purple mists of Indian summer. And now at last branches are bare and leaves rustle underfoot.

PASTURE STONES

In New England pastures, the boulders are as much in harmony with their environment as any tree or shrub. They have the appearance of having grown here, quite as naturally as the bayberry and the sweet fern, and are kindred of the savin, and the low-spreading juniper which circles round them and hugs the stone like the lichen itself. The migrant boulders from the North are congenial to these hardy northern plants which reflect the somber character of the rock.

A field that has been entirely cleared of its pasture stones and left to stand thus, somehow looks barren and deserted. You feel you would like to restore a boulder here and there and invite the juniper and the bayberry to return. There is character in these ancient pasture stones, and they cannot be removed without depriving the landscape of that which they imparted; it is no longer virile and forceful, but tame and meek as though shorn of its strength.

If you would build your house on truly historic ground, lay it on foundation of pasture stones, and incorporate, as it were, Time itself into the structure. This is to let the very elements work for you. On many a farm the boulders are as good a crop as any; when they are gathered into the walls to give room for one more lucrative, this value at least of the farm is still represented. The fields have produced but one crop of boulders, and only the ages could mature this. If the pastures must lose this ancient beauty, let the house gain by it. Build it into your chimney. Take it to your hearth that it may not be lost. Let the boulder tell its story by the light of the hickory logs.

There is a rustic notion that boulders somehow *grow*, in some inexplicable manner enlarging like puffballs and drawing sustenance from the earth — and what could be more puzzling to the uninitiated than the presence of these pasture stones? His was an ingenious mind who conjured up that remote ice age from this fragmentary evidence and derived a history from these scattered letters and elliptical sentences. It was like tracing the stars to their origin.

It takes a bold imagination, indeed, to see these familiar fields and woods overlaid with a mile's thickness of ice; to recognize here in this present landscape a very Greenland, redeemed and made hospitable. There was need of a solid foundation of fact, patiently garnered, before such an arch of fancy could be sprung. What chaos and desolation once reigned here, only these boulders can tell. Here was a frozen waste as barren as the face of the moon. But beneath lay the soil that was to nurture the violet and the hepatica. There was a fine satisfaction in riding a miracle like this to earth, to corner it and see it resolve itself into the working of natural laws.

Nature appears as intent on breaking up the old rocks as in forming new ones. The ledge is, after all, but a mass of masonry in which huge blocks are set without mortar and as closely and evenly as jewels. What a lathe was that ancient glacier in which to turn and smooth these rough gems; or rather a great file which rasped their edges and corners. In rectangular blocks that have weathered, the decay is deeper at the corners, so that a cubical block tends to become a sphere as it diminishes. Frost is the stone-cutter, who

scatters his chips over the world; Rain, the giant who is bent on turning these into soil. Consider what power lay in this tongue of ice which licked up the crumbs of the earth; carried Canada into New England and New England into New York, depositing its burden as gently as the petal falls from a rose.

Boulders are to be considered veterans of glacial times, which carry still the scars of that strenuous day. What tales they have to tell of that mammoth conflict, that prehistoric incursion of the Arctic hosts, but only to very good listeners are they unfolded. You must needs have a sympathetic ear to become their confidant. The unconscious rock assumes dignity in view of its past, as though here were an imprisoned earth-spirit, proceeding thus through the strenuous life to some ultimate freedom. Sermons in stones indeed! A terminal moraine is the most ancient battle-ground of the world. Here are the very heroes themselves, stretched upon the field in imperturbable granite, as certain others were fixed in the heavens as constellations. To walk among them is to see in fancy the advent of the wall of ice, mile-high, which buried the primitive jungle forever. Here

the great glacier began its retreat, and over the spot there broods a silence, as over historic ground once the theater of great actions. After untold centuries, the wild rose and the hay-scented fern cluster round the boulder, and dandelions star the grass.

I please myself with imagining the venerable pasture stones to have been observant of events and to have retained the memory of it all, as the Colosseum might have memories of Rome, or the Sphinx of Egypt and the desert. Such have seen races live out their lives and disappear. That every dog has his day might well be a maxim among these ancient ones of the earth who saw a tropic jungle resolve itself into an Arctic solitude and as slowly give way to a temperate zone. I salute the pasture stone as having witnessed the advent of man upon the earth. It is difficult to associate the tertiary animals with anything but the museum, or to realize that those preposterous Paleozoic reptiles were ever other than fossils. But here is a weather-beaten observer that was actually contemporary with that life, to us so intangible and shadowy; that knew the ancestor of the horse, and ages before the separation from the mother

ledge, it may be, was wont to see the sky darkened by flying reptiles.

They were fashioned roughly, these boulders, cast in a rude mould, as if they had emerged from chaos itself before form had become defined. The sea would have all the pebbles on its shore of a size and shape. It takes a block from the cliff and turns it in its lathe that it may become a polished sphere, as in that larger and cosmic lathe the planets are turned. On the beach are innumerable stones that look as much alike as so many eggs. But no two pasture stones are the same. They were turned in no such precise lathe as the sea's, but by a rough-handed force, which here planed a surface and there gouged a depression. Pasture stones are thus almost as individual in appearance as men. Here is one squat like a toad, one humpbacked as a dromedary, another flat as a cake — a mere slab of granite. They are wrinkled and deformed, as so many gnomes, and covered with excrescences — razor-backed or round-shouldered, lopsided or with protruding paunch, while the great solitary boulders rise from the pasture, massive domes and pinnacles of granite.

But none are polished, none are symmetrical;

nowhere is there an ellipsoid, such as the sea loves to turn, but rough outlines always. Frequently one surface is rounded; the work of making a sphere was begun but progressed only thus far. Again, two surfaces may be approximately parallel and the remainder rough and angular. Commonly it is an affair of many angles, all unequal, and of a multitude of curves of different radii. It is cast in a mould it would be difficult to classify. With the multiform aspects of crystals, they are still not so varied as these pasture stones. For crystals, for leaves, for snowflakes, there are definite patterns. But the boulder is a thing by itself, subject to other laws and formed under a different order of architecture — or under no order — but the will of the glacier, which has left here and there the marks of its icy fingers.

There is a suggestion of friendliness in the way the lichens clothe these stones, as though Nature aimed to cover the scars she could not heal, or to hang them with such rich medallions as the parmelia in token of that ancient service. Here are colors such as only Time can mix,—shades which are the work of centuries, unspeakably softened and mellowed, like ivory and meerschaum

and bronze. In its day the Acropolis may have been glaring and crude in tone; the raw marble, fresh from the quarry, needed these centuries to subdue and mellow it. It has acquired a tender beauty unknown to that classic day which saw it in its splendor. Some such service has been rendered to the pasture stone and the ledge. When the Archæan granite was poured out from the depths it must have worn a new and crude look, albeit so fresh and clean. Then it was but so much raw feldspar and quartz and mica. But it has long been wooed by the air and the water, by moss and lichen; the years have lent it beauty, softened its curves, rounded its angles and brought it the richness of age.

Boulders are sometimes clothed with a larger growth. I have in mind one, from whose apex springs a maple at least half a century old. It lies at the head of a swamp, and in autumn this tree is always one of the first to turn. In August when the tupelos show signs of change, the maple is already glowing with color. The tree springs from the very summit of the rock while its main root reaches through a split some fifteen feet to the earth. Looking across the swamp, it appears to

crown the boulder with a noble dignity — a landmark in the country round — as if reflecting those elementary forces which conspired to bring about this unusual condition,— the glacier which brought the boulder, the winds which carried the maple seed, the frost which split the rock.

After their many vicissitudes, the boulders have settled down upon the bosom of the pasture and come to be a fixture in the landscape. This present age is to them the serene and mellow autumn of their troubled life. Their day is a thousand years. But they are melting into soil — as icicles dissolve in the sun — in that measureless and yet imperceptible thaw which melts granite. The pasture land is perhaps the dust of a still more primitive race whose life has been transmuted into the dandelion and the thistle.

NEIGHBORS

All wild animals are wary and suspicious, even when they do not prey upon one another. What friend has the rabbit, the chipmunk or the weasel? They lead friendless lives and die tragic deaths. Why should not a rabbit gossip with a woodchuck, for instance? One would think their common danger might draw them together, and that they might perhaps learn a little woodcraft one of the other. But caste is nowhere stronger than in the woods. They do not sit at meat together unless, indeed, one is himself the repast.

Like a subtle atmosphere the spirit of the wild pervades the forest. Whoever enters comes under its spell. In the woods the dog tends to revert to the wolf, and savage instincts come to light. On the street he may pay no heed to people, will move in and out among them, himself a bit of civilization; but let him leave the village and go into the woods, and he is suspicious and on his guard.

We have so fostered this attitude of fear and distrust that our wild neighbors are at best but casual acquaintances, if not complete strangers to us. We are like sharpshooters ambushed around the outposts of an encampment. A stray inmate pokes his head out of the trenches and essays to go to the spring for water. Perhaps we let him drink and make a note of that, then — whiz! we let fly at him. We discover what he has had for dinner and a few other trifling matters — and we get his skin. His ways remain strange to us and his language no more familiar than Choctaw. Sometimes we catch him and put him in a cage. But what can be learned of a poor, sullen prisoner fretting away his life with terrible thoughts of distant sunlight and running streams and friendly woods?

The acquaintance of a wild animal is not to be made with a gun. Practically nothing is learned in this way; it is difficult enough to know them without this barrier. But never to have loved the wild things is to have lost much — to have lived less. Any dolt can shoot an animal and have a bag of bones for his pains, but to win over such a creature in the smallest degree implies a victory,

and is evidence of the redeeming power of the heart. There is a rare pleasure in encountering deer when you have no designs upon them. Such furtive meetings are in themselves adequate. They have the fascination of lovely faces seen for a fleeting moment in a crowd, instantly to be lost sight of. How little we really know about the lives of animals. We can surmise a few things and imagine a great many, but we *know* next to nothing. Perhaps there is not so very much to know. Their emotions are not complex but simple; their lives run in narrow grooves. That they suffer, much as we suffer, is certain, and the main thing is to be kind. It is impossible to come upon a wild animal and watch it unobserved without deriving a subtle impression foreign to our usual life. There is something in the free, savage existence which is a shock to the thought-burdened, educated mind, and breaks for a moment its prison of glass.

A glen to which I often go is, like most others in the sequestered woods, really populous, while being to all appearances quite deserted. Its inhabitants are closely associated with the brook; they drink at it and all their lives hear its song.

This glen is *their* world, and yet they possess it and live in it in virtue of persistent self-effacement.

There are mice and shrews, chipmunks, red and gray squirrels, a woodchuck or two, a skunk, a little gray rabbit, a weasel and a mink. Far from being alone, you are watched by numerous unblinking eyes. From the grass, the rocks, the trees, motionless and in silence these creatures are observing you.

The squirrels have overcome somewhat their hereditary fear, doubtless because we are more kindly disposed to them. As I take my lunch from my pocket, thinking to eat it alone, a chipmunk approaches and sniffs at the package as I put it down. The aroma of bread and butter tickles his nostrils, suggesting some unaccustomed variety of fare, and presently he loses all fear and begins tearing the paper. After a little coaxing he takes a piece of bread from my hand, licking the butter off first with his small pink tongue. He has no sooner eaten it than another chipmunk appears and sniffs the whiskers of the first one. He, too, is overcome by the seductive aroma, and apparently receives some assurances, for he cautiously approaches and takes a morsel of bread.

The package is returned to my pocket, and both chipmunks climb in without hesitation, tear off the paper and help themselves. Meanwhile a third arrives, having somehow learned of the good cheer, and it is not long before all three are scrambling over me.

One cold February day, when no gray squirrels were to be seen, and the snow lay deep in the glen, a solitary red squirrel appeared and looked long in my direction. Then by as direct a course as the ground would permit, he came toward me, over the intervening boulders, until he reached the one on which I sat, whereupon he immediately ate the bits of apple I gave him. He had been with me some little time when I chanced to look over my shoulder, and there at my elbow was the mink. The squirrel saw him at once and made off toward the trees. The mink appeared to take no notice of him, but his presence had evidently disturbed the harmony of the occasion.

The red squirrel stands in no awe of man, but he is as untamable as anything in the woods, none the less. Sit quietly under the hemlocks and the chances are that before long he will be scolding at you from somewhere in the tree tops. Presently

he will come down the trunk, head foremost, moving mechanically with little jerks, as though pulled by a string, his hind legs stretched straight out above him. Down almost to the ground he comes, holding himself well out from the tree and eyeing you inquisitively. Suddenly he turns and scurries up the tree, chippering volubly meanwhile, to rush out on a limb and continue the denunciation, adding emphasis with his tail with which he seems to gesticulate.

There is no merrier sight in the woods than a pair of gray squirrels in a frisky mood; it is unmistakable fun. The gray is averse to the coniferous woods and the red prefers them; thus each has its territory. Apparently the red is more self-contained and readily amuses himself. He is of a more caustic mood; his fun is not so childlike and guileless. Nor is he himself, for there is a dark streak in his make-up, a certain taint in his disposition and always a satirical note in his laughter among the tree tops.

Eight inches or more of snow, and a hard crust, and it becomes poor pickings for the wild things. Here and there are holes where the gray squirrel has been prospecting. Near by, in most cases, lies

the cup of an acorn and strips of shell, showing the squirrel went directly to the right place. It is to be observed how many of these excavations are under pines, sometimes several under a single tree. As late as the 1st of April I have noticed a gray squirrel busy under a pignut, burying the nuts which had lain on the ground through the winter. He would first rapidly shuck them, then dig a small hole, force them well into the earth with a vigorous push with his jaws, and as rapidly cover them again. In this way he would bury a dozen in as many minutes, and then make off through the woods.

Between the squirrels and the mink family the difference is as much a matter of disposition as of structure. The mink is the evil genius of the place. His character has written itself in his physiognomy, glitters in his eye and shows itself in the serpentine motion of his head. His silence speaks. But his presence is agreeable in a way, for it is a touch of that savage nature we do not otherwise get without going back into the wilderness. A squirrel reveals his candor in his inquisitiveness and in his noisy ways; curiosity gets the better of his fears. These psychologic differences are as marked with animals as with men.

I once surprised the weasel in this glen, with a young robin in her mouth which she had just taken from the nest and was carrying home for her family. She dropped the bird when I threw a stone, whereupon I stood by the dead robin and waited, anticipating her return, for I knew the weasel's boldness of old. Almost immediately the sinister-looking creature poked her head from the bushes and, without hesitation, approached and seized the bird where it lay between my feet. Another stone caused her to drop it again before she had gone far. This time I moved the robin some little distance away and stood beside it as before. Soon the weasel reappeared, and going to the spot where she had last dropped it, became visibly excited on finding it gone. She then began rapidly following the scent, like a hound, and at length by a circuitous course, approached, and again took the bird from under my feet.

Almost every fine day in autumn the woodchuck is to be met. He emerges from the bushes with deliberation and ambles out into the open where there is a little clover to tempt him, his tawny legs showing in strong contrast with his grayish back and scraggly black tail. His enjoy-

ment is evident; the sun feels good to him. He is a chilly body, and, like the snakes, cannot get any too much warmth. Now he sits upon his haunches and takes a deliberate survey, then pokes some greens into his mouth with his forepaws. If his sharp ears bring him no suspicious sound, he drops upon all fours and goes to browsing again.

No one has explained why the woodchuck holes up so early in the autumn and comes out at such an unseasonable time in the spring. He goes in while there is still plenty to eat, and reappears when there is scarcely anything to be had. Possibly the habit was acquired in some remote past when the winter may have come earlier in the year, and the woodchucks, being a conservative race and loath to change their ways, have never adapted themselves, but go to bed now as it were in the middle of the afternoon and get up before daybreak, impelled to this early rising by hunger. Soon we shall be walking over his head, but it will not disturb his nap. He will have rolled himself up in a ball for a four or five months' snooze in company with all the little frogs and snakes — a sleepy crowd. The chipmunk is likewise a chilly body, but he is not going to fast —

not he — so he lays in a good store of chestnuts and makes all snug for the cold weather.

While the moral of the ant and the grasshopper will doubtless always hold good, there is little incentive for the grasshopper to become thrifty as few would live to enjoy the results. But the woodchuck might well profit by the example of the chipmunk, who loves his comfort and a well-stocked larder in which to snooze away the winter months, a round of dinners and after-dinner naps. Besides his hordes of beech and chestnuts, he is credited with gathering the seeds of the buttercup as well as buckwheat and grass seed. I have seen him on the tips of witch-hazel twigs biting off the nutlets of the preceding year. He has some variety at his table then. The buttercups must be in the nature of a delicacy — his sweetcakes perhaps.

As the weather grows colder the vegetation seems to droop hourly, the bare earth becoming visible, except where the dry leaves have roofed themselves over the huckleberry bushes or in the thick tangle of briers. The rabbit must feel himself rather too much in evidence as the ground is thus exposed, and perforce relies more on his

protective coloration to escape notice. An adept at dissimulation, he turns into a stump and remains so indefinitely. Yet looking at him recently, as he sat motionless on some dry leaves among the bare stems of the blackcap raspberries, I was struck with how poor a refuge his colors really do afford when once your eye is upon him. At the first glance, and before he had come into the mental vision as a rabbit, he appeared as a small grayish stump covered with buff-tinted shelf fungi. But the moment I looked sharply at him, he was a rabbit in every detail. His colors did not greatly harmonize with the oak leaves on which he sat, yet he allowed me to approach and walk around him. It is all a matter of the attention; by remaining quiet the animal does not arrest the eye readily, but once this is directed upon him the disguise is seen to be very thin.

Save for his nose, which wobbled slightly, he was motionless as a stone. After some time his ear moved gently, much as a leaf is turned over by the wind, but his eye never winked and its expression was one of extreme alertness. On too near an approach he made off in haste. Noting his direction, I followed to see if I could again

locate him. For some time no rabbit was visible, when I chanced again upon a little gray stump covered with buff-tinted fungi, which appeared this time on the pine-needles and just within the charmed precincts of the briers.

I produced an apple as a peace offering and in token of my good-will and desire to be of service to the tribe of gray rabbits. He remained like a stone while the bits of apple descended about him and lay at a tempting distance. At last there was a more vigorous wobbling of the nose, the long ears moved — as a leaf turns — and with two little hops he approached and accepted the token, and we were brought together in amity in the silent woods. A humble offering, indeed, but it served for the moment to bring me in touch with the wild and to strike a common chord. The seemingly impassable barrier of caste, which lies between man and the wild things, was crossed, and we broke bread together.

After a light fall of snow it is instructive to read what the rabbit has written in his diary. Such scattered notes as he leaves are wholly personal and do not seem to imply interest in anything but himself. You may see where he has hopped

through his runways and stopped now and then when the necessity appealed to him of removing certain briers to keep the passageway clear. Sometimes it is a stem of the catbrier; again a rose or blackberry. In every case it is cut obliquely and as sharply and neatly as with a knife. Frequently stems are severed thickly set with thorns and prickers, and the wonder is how he closed his teeth upon them without getting an unpleasant mouthful. Hundreds of cuts reveal never a slip or break, but each is sharply defined as if done by one stroke of a razor. His track shows places where he sat upon his haunches, and where he stood up to reach the buds of a stunted wild apple; again he followed the shore of the pond and nibbled the small willows and clethra. Occasionally he appears to have cut a large brier merely for practice in using his teeth.

Rabbit and fox are outlaws and without rights. They are hunted to death; hence they live by their wits if they live at all. It has become second nature to them to proceed indirectly, to break the scent and double on their tracks whenever occasion offers. The fox knows few foes besides men and dogs, but the rabbit must circumvent owls,

weasels, minks and foxes as well. Hence I bow to the rabbit as to a superior intelligence: one deeply versed in the ancient lore of woodcraft and possessing knowledge as yet unrevealed to us. Does he carry some charm whereby the earth opens and receives him in need, some tarn hut in which he becomes invisible, or does the fabled St.-John's-wort exercise for his race a special protection? What shall fill the place of the wild things when they are swept from the earth? Why not tolerate an occasional fox if only to hear him yap, and to have the assurance that there is still this much untamed?

In such a timid world, where fear of man is so large a factor, one is struck by the least evidence of self-assurance. In view of this I entertain a covert admiration for the skunk. Fear rests lightly on his shoulders. Meet him in the woods, teetering along, and he is the less concerned of the two. His imperturbability is his leading characteristic. In this he is the very opposite of the coon. But he knows how terrible is the weapon he carries, how vulnerable the nose of man. The nose is the point of attack; he would slay you through your olfactories. It is seldom any one says a good word

for the skunk. He must needs be a villain and a chicken thief who smells thus to heaven. Yet in fact there are bolder thieves in town than he, with more sinister designs on the hen-roost. It is impolite to mention him, as though his name were as unsavory as his odor. Men deal more kindly with his memory, for he is permitted to undergo a commercial transfiguration, to rise triumphant from the vat, henceforth to be taken to our bosoms as Alaska sable.

The skunk receives no credit for the countless beetles he grubs from the earth. No more does the mole who suffers for the sins of the meadow-mouse. They are victims of prejudice. When I see a mole emerge from the earth, I feel I am looking upon an inhabitant of another sphere—the underworld; one as strange to me as I am to him. What use has he for the sun? He cares not for celestial light, but for subterranean fires only.

In the pond above the glen is a colony of muskrats. It antedates the memory of the oldest inhabitants, and the muskrats were in all probability the first settlers themselves. The huts, which lie scattered through the sedge and cattails, are some of them flat while others are high and dome-

shaped. Their number does not seem to vary much from year to year, whereas muskrats are said to be very prolific. What, then, becomes of all the young? I have never known of any one trapping or killing them in this pond. It may be the old mink in the glen, and many another, make this their hunting-ground and thus keep down the number.

These queer neighbors pique our curiosity. What manner of life do they lead indoors? They take some rude pleasure and have dull animal thoughts perhaps. As you stamp upon the ice and slap your hands to keep from freezing, the muskrat sits serenely below enjoying the comforts of the pond, and quite unaware the mercury has dropped to zero. He has built him a house and stocked his cellar, and what cares he. As snug as a mouse in a cheese, he has taken the precaution to make his home of his favorite dish. Let the world freeze, then, if it will, he nibbles the walls of his room till it thaws again. Consider the interior of that dwelling, what a murky house is there, its front door under water and never a window.

Muskrats repair and enlarge their huts in the

fall, and perhaps subsequently gnaw out as much from the inside as they add to the exterior. The walls are made of grass and sedge roots, together with spatter-docks and bur-reeds. During the summer you might not suspect the presence of one, hidden as they are in the cattails and rank growth of sedge. As the vegetation dies down in autumn, the huts loom proportionately, so that they come prominently into view by November; and then, on some fine cold morning, in place of the reedy pond, appears a sheet of ice with isolated domes rising here and there. From these, the muskrat and his family travel to their feeding-grounds. They have chosen their estate at the bottom of the pond — rich lands for which none contend with them.

In fact our wild neighbors all live in a dim world of shadows, in which they lurk like phantoms. They have retreated into the night, and for days together you may not meet one. But the new fallen snow reveals their presence.

THE WINTER WOODS

The first snow-storm of the season never becomes an old story. It retains its charm indefinitely, to all original minds at least, and to such as have cherished any degree of simplicity. Here is a mimic invasion of an elemental beauty which conquers us by reason of its very gentleness. We are soothed and beguiled into submission. Tempestuous winds call forth our resistance; we front them with set teeth. But who can resist the silent snow descending as if to lay the world under a soft enchantment? The woods are renewed and reclothed in virgin purity. It is as if old scores were wiped out and the world were again a spotless thing.

What can be more companionable than the falling snow? Its touch is so caressing, its advent so silent in the open, its voice so pleasing as it sifts through the pine-needles. The first solitary flakes approach with the gentle effect of preparing one for the miracle to ensue. A calm settles over all,

as though these were indeed the messengers of peace.

Recently there fell such a clinging and abundant snow as comes perhaps only once in a season, and some years not at all. The woods were literally buried and saplings everywhere bent to the ground beneath its weight. It enveloped the pines until they became miniature Alps in the landscape, while among the oaks were gleaming corridors and marble halls. The open, barren aspect common to winter was gone, and the dense walls had shut in again as in summer, but now crystalline and dazzling.

This is perhaps Nature's greatest transformation. In a single night have been erected such palaces as were never seen in Persia. What a bold, free hand wrought here! In the thousand domes and arches is a massive architecture, relieved by the utmost delicacy, as though Nature said, "Behold, I show you a miracle." A miracle indeed! Here have wrought the genii of the air while mortals slept, and all that was to be heard was the rustling of their wings. At such times the woods grow suddenly strange and unfamiliar. They so lend themselves to the enchantment we are lost in

our own wood-lot. Familiar paths are obliterated by pendulous boughs drooping to the earth, while in the pasture tree-sparrows hop upon the snow among the protruding tops of the tallest ragweeds.

Realize if you can in your walk, over how many sleepers you step all unknown; how many woodchucks in their burrows, and frogs in the mud under the ice; how many torpid snakes and dozing chipmunks. Here is an enchanted household—underground. They are at peace and their timid hearts know no fear. The dreaming toad has no terror of writhing blacksnakes, and the snoozing woodchuck has forgotten the dog. Presently they will awake to hunger and fear again. Woodchucks will be up long before breakfast, to go shivering in the cold dawn of the year waiting for the table to be spread. Snakes do not come out till the sun is well up, to lie basking in the noonday heat, catching the first unwary grasshoppers.

Every fresh snowfall makes some revelation of its own, recording crepuscular journeys and prowlings in the night. The broad track of the skunk meanders in and out among the bushes. That he had no definite direction, took never a straight course, nor apparently did he hurry, is in itself

evidence of his phlegmatic temperament and leisurely habit of mind. Footprints of the ruffed grouse show that he has on his snow-shoes, inasmuch as they are feathered, broad and lobed rather than angular. The squirrel leaves evidence of his impetuous ways, moving always impulsively, and the snow makes plain record of the fact. Tracks of deer seem to bespeak their innocence, as that of the fox might be said to have a sinister purport, doubtless because the hoofprints have a gentle suggestion and imply the herbivorous diet.

In the winter walk the eye finds relatively so little to hold it, that it rivets itself upon minute details, dissecting that which might pass unnoticed at other seasons. Form and outline come into prominence while color is in abeyance. We must now perforce judge the trees by this standard. Who shall describe the winter beauty of the beech as it stands stripped and naked to the winds like an athlete, every muscle and sinew in evidence, every outline expressive of reserve power and self-assurance — a clean-limbed, stout-hearted tree, dauntless before all gales? Its trunk is a superb torso, and with its roots it reaches down to the heart of the earth, draws sustenance therefrom and derives heat

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WINTER

from that deep-lying warmth below all frost lines. No parasite this, no surface weed, but the sturdy child of Earth herself, suckled by a Spartan mother. Look upon an ancient beech, bared thus to the storm, and the chest involuntarily expands, as though we too should take firmer hold somewhere and stand more erect. The shellbark is as shaggy, raw-boned and loose-jointed as the beech is trim and closely knit. Its bare branches are not clean-cut against the sky but swollen and distorted like knotted hands of toil — horny, crooked fingers upraised to the heavens. What rude strength is their portion who stand thus alone and derive from the earth as befits the stalwart — buffeting, solitary and unyielding, the winter gales.

As the trees are leafless, the bark is now more in evidence. Moosewood looks slender and striped as a ribbon-snake, and limbs of the hop-hornbeam have the appearance of sinews. Where a black and a white oak stand near together, the difference in color is as evident as between a negro and a white man. The white birch is to the winter woods what the dogwood is in spring, the maple in autumn. How is it the ancients did not metamorphose the fairest of all nymphs into this

tree, so distinctly feminine is its beauty? Portions of bark outlast the wood, and are to be found standing erect and empty. The tree has departed, bequeathing its fair skin in token of a vanished loveliness. Now and then the yellow birch is seen in all its beauty, the golden inner bark shining through a silver filigree. To look at this tree is like looking at a picture or reading a poem: one feels somehow refreshed. Nor is the black birch without charm; its bark has a dusky beauty, and again shows fine wood colors and metallic tints similar to the black cherry. This fine luster the birch has in an eminent degree while most trees show it only on their small branches, if at all.

Club-mosses appear to be a lesser growth of pines, a pygmy folk dwelling at the feet of the elder race. Here are miniature trunks and branches bearing miniature cones, perfect little conifers no higher than a chickadee. Ground-pine and trailing Christmas green thrive together on the bank, the latter with stems a yard long, which, while they grow at one end, die at the other. These little plants are crisp and green and refresh the eye on winter days, as does the Christmas fern, which affords a pleasant encounter at a time when one

meets few acquaintances. It has, moreover, a certain charm of its own which doubtless lies in the crispness of the fronds and clear-cut outlines of the pinnæ. The marginal shield-fern is another acquaintance to be looked for on the winter walk, and everywhere the hardy polypody, which is as much a child of winter as the little spiny cladonia that clusters about its roots and clings to the same granite ledge.

Let there come a warm rain, the high blueberries redden their twigs and the lichens renew their tints — quite as though Nature had softened her heart. These lichens suddenly become conspicuous with a sort of gentle prominence, and mildly compel attention; on the oaks the yellow cetraria, on the white pines, olive, slate-colored and blue-green parmelias. Had faun and satyr thus carved upon the forest trees the name of some fair Rosalind among the nymphs, they could not have wrought in more fitting and altogether sylvan characters.

A common necessity and hardship hold the birds together in closer bonds so that they are impelled to consort in little roving bands — chickadees, creepers, kinglets and nuthatches, with often

a single downy woodpecker accompanying them. If one chance to drop a morsel he will descend to the ground in search of it. He will not waste a spider's egg, so severe has been the lesson in economy. In zero weather the jay forgets to be saucy, and if there is a glaze on the snow, his native impertinence seems to ooze from him, and he becomes meek enough. Taking a weazened acorn from the tree, he holds the nut with one claw, and with vigorous taps of his bill tears it open. After extracting the frozen kernel, he drops the shell with a trace of his customary impertinence, as though feeling in somewhat better spirits for even this poor repast. A bone nailed to a tree is inducement for him to stay near the house, but not when he can get acorns readily.

The board may fairly creak with its weight of partridgeberries, beechnuts and acorns, many of the latter crushed and available, and then in a night this plentiful feast is put out of sight under a six-inch layer of snow, to which the next day adds a glaze as if to seal irrevocably the doom of all bob-whites. A fast has been declared in effect, as peremptorily as by any medieval pope, to be broken only with an occasional leaf bud or the

poor seeds of the ragweed. But the good sun is a trusty friend, and snow is only so much water. Presently berries and acorns again come into view.

There is no more touching note in nature than the bob-white's at this season, as wandering together in the snow in search of their scanty fare they utter from time to time those low but distinct calls in which they seemingly express their solicitude. June itself has no sweeter song than this note of the winter woods, albeit it is such a plaintive one: mother-notes these, and child-voices of the hunted, full of a wild pathos,—tender voices which to us have been but the inarticulate cries of the dumb. The birds feed frequently on the crushed acorns lying in the path, and the jay at times participates to the extent of taking an acorn from the feast and eating it in the branches above, where he is a good sentinel, though prone to imitate the quailing of the red-shouldered hawk when the feast is at its height, to the general discomfiture and alarm of the diners below.

Birds become less suspicious as the mercury falls, and they are hard pressed for food. The snow around the ragweeds is thickly covered with the tracks of bob-whites, like those of chickens,

broad and firm, but with hardly any hind toe mark at all, as though they walked about on tip-toe. Very different from these are the long, triangular tracks of the jays, showing where they have hopped upon the snow. It is thus fairly tramped down and strewn with leaves and chaff where the bob-whites have fed, leaving these husks in token of their frugal meal. Such seed must be very small provender for these birds — much like a diet of crumbs for a hungry man. Goldfinches, juncos and tree-sparrows seek the same meager repast. The musical flocks of redpolls fare better in the alders around the pond. These are not to be seen every day, any more than the pine-siskins — perhaps not at all during several years. But occasionally an enormous flock will arrive and settle in the alders with all the chattering and commotion of a social and hungry company As the seeds are shaken down upon the ice, the birds soon leave the bushes, and are under the table, so to speak.

Crossbills have the easier time, feeding as they do on the seeds of the pine, for these are always available. No sound seems better to accord with the spirit of a still cold winter day than this faint crackling of opening cones, forced asunder by the

shearing motion of the peculiar bills of these birds. Surely here is an adaptation to definite ends. Nature produces a cone that cannot readily be opened, and, as if relenting, produces a bird to open it. The wings of the seeds come zigzagging to the ground as the feast continues overhead — all that is destined to be planted.

The lumbermen come into the woods with the crossbills, and everywhere is heard the winter music of the ax. It is good music enough, but it has a sinister purport, and the swish and boom of falling trees is a sad refrain. Ancient pines are laid low, singing to the last their brave and beautiful song, which seems to come, not directly from overhead, but remotely from the empyrean, as though it issued from the distant Court of the Winds. Of the pantheon of trees the village elm is the last to hold our homage; we have dethroned our idols. As the sound of the ax breaks the stillness, I find myself instinctively turning in the opposite direction, to escape that which is soon to follow — the swan-song of the forest primeval.

LAUGHING WATERS

There are days when the sea is austere and unapproachable, when its mood is too lofty and severe. But the pond, fringed with alders and button-bushes, smiles in the sunshine and is friendly and inviting. It is more on the level of our every-day thought. Not always are we consoled by the vast and sublime, and we crave even more the companionable and social aspects of Nature. Grim though the surroundings of granite ledge and somber pines, the nestling pond is winsome, notwithstanding. Never forbidding, never altogether distant in its mood, even though frozen, it is a cheerful and alluring personality to which we are drawn from afar.

About a pond as about a mountain there is a kind of magnetism. A new field of discovery, there is ever the hope that from a new scene we shall gain a fresh impression. Every pond holds out this possibility and invites exploration of its shores, as if *there* were the promised land. But over and

above this is that element of personality, a charm purely feminine, and eluding any attempt to hold it.

Peculiarly sensitive to light and air, a pond is susceptible of little moods that do not come to the sea. It is the eye of the landscape. Dawn, high noon and dusk are each reflected there. Its afternoon mood is not like that of the morning any more than is our own. The more passive it is, the more perfectly it reflects the heavens. At all time it draws to itself light from the sky, and when the surrounding woods are swallowed in the advancing darkness, still gleams with a faint opalescence. These pale glimmers illumine the bogs, where a pool has caught and retained the daylight, or rather the spectral light of dawn. One appears to look through this serene and reflecting surface into the heart of some other wood, darkly mysterious and impenetrable, which vanishes when the wind blows, as if the curtain were drawn.

Gently as snowflakes, the leaves detach themselves and settle on the ponds, to sail away like diminutive barks upon those friendly seas. Numberless sails of scarlet and gold softly scud before the breeze, threading the inlets between the buttonbushes and crowding the miniature bays; oriental

craft these, of rich aspect; caciques and royal barges upon some Golden Horn. Here and there, one more venturesome steers boldly out into the open, carried by favoring winds, and makes some foreign port among the lily-pads. You may become enamored of a winsome pond on October days, a mystical beauty veiled in autumn haze, only to find her mood changed for the reserve and uncommunicativeness of winter.

When the pond freezes over we experience something of that feeling which comes with the first snow, a delightful sense of novelty, briefly entertained each season. The water has suddenly lost its mobility and become passive and expressionless, as one in a hypnotic state. A great calm has settled upon the earth; the winter sleep is in the air and the ponds have succumbed with the woodchuck. Only the chickadees, scolding and gossiping in the pitch-pines, seem to be awake and unaffected by the change. A cold bluish light pervades the leafless woods, reflected from the snow and appearing to emanate from the ground rather than the sky. The earth is wrapped in silence, yet it is not austere nor repellent. One *feels* this stillness, which appeals to some sixth

sense, and is more acceptable at times than any music,—is itself the most heavenly music.

Far across the valley the steam of a passing locomotive rises slowly, and then, like the opening of a flower, unfolds in snow-white voluptuous petals and remains as if carved in the still air. A shaft of light reaches the eye from a distant pool of molten silver at the base of purple hills. All around are little sparkling lights of icicles, flashing their pure rays in the sun. It is the magic water, the protean thing so full of light, laughter and music. Once it was laughter; now in the silence it is light.

All at once the pond is alive with skaters, its solitary aspect transformed by this merry invasion. Boys cutting figure eights suggest whirligigs. Myriad black figures, clear cut in the pale light, move in and out with undulating rhythm, as on a surface of polished steel. The pond, now more companionable than ever, becomes a playground, and we never so much as reflect upon the strangeness of it. Something there is in this unbending on the part of Nature which puts us in a good humor, for certainly people are never more good-natured than on the ice. Their habitual stiffness

melts away as readily as ice melts in the sun. They experience a thaw and become democratic.

To skate over meadows and into inaccessible bogs gives one a taste for exploration. It is a new freedom and perhaps the next thing to flying. Seen through the clear "black" ice, familiar objects have an added interest; the pebbles on the bottom, the spagnum, the lily-pads, all give the impression of being severed from our world, though so plainly in view. The skater glides in and out amongst cassandra and andromeda, clethra and black alders — wintry jungles, enlivened only by red winterberries — where in summer is the haunt of the rose pogonia and the white-fringed orchis. Who would imagine now that the swamp was capable of producing anything so exquisite, that it held beneath the ice the seeds of such beauty?

The most friendly voice in Nature is the song of the brook. Not the wind in the pines, not the voice of the sea, can compare with this for true sociability. These are always somewhat remote, somewhat mystical in our ears, but the song of the brook is cheerfulness itself. Its *bonhomie* is irresistible. It gradually prevails over any whim and wins us to a sociable and contented mood.

Though the world may seem discordant enough, there is always this wholesome note.

No two brooks are alike. As the result of the character of the country through which they flow, they impress one as having strongly defined personalities. A creek flowing sluggishly through the alluvial districts of the South is insipid compared to a mountain stream in New England. Your mountain brook is a strong, salient personality which dominates the landscape. It sweeps in bold curves about the base of cliffs, and contracts into a mere mill race cut in the distorted schist and gneiss. Its suggestion is wholly of savage strength, a rude, forceful thing of the wilderness; its song a masterful strain, a triumphant chant of power. Again, there are merry little streams tinkling in the sunlight.

In cutting down its channel, the brook may reach a stratum seemingly richer than any above, so that in April its banks become a garden. While scarcely a flower is to be seen on the hillsides, the fertile floor of the ravine is carpeted with spurred violets, groundnut and spring beauties.

One such as this falls into a glen over a little precipice, spreading itself out like a fine veil which

ceaselessly undulates in the breeze, and now and again floats away in mist ere it can reach the pool below. Under the overhanging rock, Alpine woodsia and cliff-brake thickly cluster, while on narrow shelves are hanging gardens of dicentra, and in the crannies, little patches of mountain saxifrage.

Below is a golden sheen where the spicebush is in flower, and a shimmer of pale green about the early willows. From the glen comes the song of the ruby kinglet, bubbling up and dying away. Incomparably wild, it seems to express the abandon of a spirit ever free. All the while the companionable brook gurgles and tinkles its reposeful melody, and the white veil of the waterfall undulates softly in its dark cavern. The air is full of that indescribable suggestion of spring, which is like hashish, and casts a glamor over the world. Gradually one is imbued with a sylvan consciousness and attains to a rapt and intimate point of view.

It is curious, as one follows down the ravine, to hear the different voices. The brook seems as if inhabited by a number of spirits throughout its length, some whispering, some laughing, others singing. Not only are the voices pitched in various

keys, but the quality of tone differs essentially. Some are loud and portentous; others, melodious, liquid gurgles. In one place the voice implies an intimate and confidential mood, so gentle, so exquisite, that the full import of the musical conversation is felt only in midstream,—whispers and murmurs which have almost a ventriloquial effect.

Countless bubbles glide down the current and vanish one by one. Sunbeams dance over the rapids and out upon the pool, and then, as the sun goes under a cloud, the stream as quickly takes on a somber mood. Presently comes the melodious patter of rain-drops on the ground, an even, sustained note, very different from any voice of the brook as it dimples and answers the rain, one soft voice replying to the other. Already little pools form in hollows of the rock and reflect light, so that the face of Nature is perceptibly brighter.

Considering this aspect of the streams, it is easy to see how the primitive mind came to personify them, since the brooks have motion, voice and expression, ripple and laugh in the sunshine and are responsive to the wind and the sky. They are still divinities to the fisherman with whom he comes into an ever closer affiliation, as gentle and

poetic as he may be qualified to enjoy. The murmuring waters, the whispering trees, the silver and cupreous gleams of trout are the facts with which he becomes enamored, while he loses affinity with the world, which slips into the background.

THE MOUNTAINS

He knew the mountains, who said, "I will lift up mine eyes unto the hills from whence cometh my help"; knew them in some intimate, spiritual way, for his words imply a noble association and companionship. Wordsworth understood them in this way, but not as the mountaineer knows them. They are ethereal dream-mountains the poet sees, rather than actual rock and soil.

On the horizon the mountains wrap themselves in mysterious light and color and seem invested with certain qualities which they lose near at hand,—as a cloud, so beautiful an object floating in the heavens, is but a fog bank once we are enveloped in it. Distance does actually lend enchantment. The range beyond has always some attraction this one lacks. In truth, mountains are illusory objects, and, to the most matter-of-fact point of view, are something more than rock. That marvelous purple of the distant hills, assumed as an imperial robe, slips away as we approach,

and we find them dressed in plain brown homespun. Never do we as much as touch the hem of that royal mantle.

A symbol of the unchangeable, they are none the less marvelously sensitive to the play of light, and thus appear to vary with the conditions of the atmosphere. There are days when they seem to approach, and times again when they recede and become distant and nebulous. This magic-play of light proceeded from their birth, and goes on forever, the unceasing illusion, the beautiful witchery.

From the violet shadows of their bases they rise through a stratum of ethereal blue to emerge glistening white. Now they are savage and defiant in their somber shadows, ramparts and battlements; again, opalescent, lying like cumulous clouds on the horizon. What a vast bulk is yonder spur, massy and ponderous in this light, but tomorrow it may appear immaterial as thistle-down and to hang suspended in the ambient air. In the morning the crags and cliffs stand out naked and dazzling on the great rock mass of the peak; yet before night every detail may be obliterated and the mountain appear a lowering mass, dull and grim.

It is with mountains somewhat as it is with people — there must be perspective if they are to appear all serene and beautiful. In the distant chain the details are lost, and we receive a single distinct impression of serenity, as though they stood there a type of the fixed and eternal. But in among them there are everywhere signs of convulsion, everywhere evidence of change and decay. It is in the distance, then, that the poet loves them best, as a beautiful vision, which lures and beckons him. It is to these he lifts his eyes, from these he receives his inspiration, for they are ethereal and opalescent and play upon his fancy, provoking him to subtle thoughts of the Ideal, rose-colored as themselves.

They who do not live where they can see the mountains miss somewhat in their lives, as do they who never hear the sea. It would seem as though one or the other were essential to a normal human environment, providing that changeful beauty which forever stimulates the imagination. We necessarily lift up our eyes to the mountains with some corresponding elevation of thought. Again, from those desolate heaps of granite we receive the suggestion of something immutable

and permanent — delusion though it may be. Whatever convulsions they may have known were birth throes and growing pains. Venerable beyond human conception, their life is measured, not in years, nor yet in centuries, but in epochs and eons of time; and out of this inconceivable antiquity, with its tumultuous youth, has come repose at last — a serene old age.

One readily understands in the mountains how the old myths of the gods and giants arose. Why should not the gods have dwelt on Olympus — and here in the Rockies as well? What place more fitting? A setting, stern and heroic, and not altogether hospitable to the puny race of man. There are places of such sublimity and desolation, you feel you have looked in upon Olympus when the gods were away, and that any moment they may return with their thunderbolts. Wandering alone in these regions is like an excursion into legendary lore — and one would better wander alone, for in our deepest moments the mountains are company enough.

One companion you may have — should have, in the mountains — a horse, a kindly and sociable animal, who knows your foibles as you know his,

and is willing to humor them. He must be a trail-horse, sure-footed and not finicky about fording mountain streams. If you do not come into some renewed sense of freedom, if the solitude does not speak to you, if you do not become better acquainted with yourself, it is because you really have not surrendered to the genius of the hills but have come preoccupied with other and lesser things. Thoreau did not so greatly exaggerate when he said one must make his will and settle his affairs before he was ready to walk.

One does not tire of sauntering through the mountains. They seem always to invite. Mystery lurks in the ravines. There is no sound but the distant tinkle of a cow-bell, which is pleasant music. Over the ranges and the velvet folds of the *mesa* the lights and shadows play like a passing smile.

Though the ideal eludes on a nearer view, we nevertheless derive some larger sense of freedom from personal contact with the range. The foot must know the trail; and this association yields that which no road can ever give — a good understanding with the mountain itself. As far as the eye can see, neither fence, nor house, nor road;

only the somber forest, the naked ledge. While this tramping over trails hardens the muscles, it toughens also the sinews of the mind. One has mountain thoughts as well as mountain air. The single drop of aboriginal blood tingles in the veins, while the tendency is strong to revert to the wild and to a more rude and savage life. There is experienced some furtive desire, as of a wild animal, to scurry away into these grim ravines, or to leap from crag to crag with the bighorn,—presumably a sort of mountain madness, which is dispelled on the descent to the village.

Who can hear the wild song of the ouzel and not feel an answering thrill? Perched upon a rock in the midst of the rapids, he is the incarnation of all that is untamed, a wild spirit of the mountain stream, as free as a rain-drop or a sunbeam. How solitary he is, a lone little bird, flitting from rock to rock through the desolate gorge, like some spirit in a Stygian world. Yet he sings continually as he takes his solitary way along the stream, and bursts of melody, so eery and sylvan as to fire the imagination, come to the ear, sounding above the roar of the torrent. Like Orpheus, he seeks in the nether world of that wild gorge for his

Eurydice, now dashing through the rapids, now peering into some pool, as if to discover her fond image in its depths, and calling ever to lure her thence from that dark retreat up into the world of light and love. This bird, more than all others, embodies the wild. In him the spirit of the mountain finds a voice.

Here we make the acquaintance of the rocks as no where else. One discovers their individuality and comes to feel that even they may be companionable. They have much to say if only one can hear it; but like the aged, their conversation is all of the past. The foibles of their youth are still to be traced in faulting and non-conformity. How tumultuous was that youth; how serene their old age! Stratified or volcanic, each tells its own story. The sandstone cliffs speak of the sea, which preceded them, and of which they are the sediment merely. Upon that shore no human eye ever looked, and yet it is registered here, as the ruins of Mitla record a race unknown to history. The cliff is a chapter in a biography written before the advent of man. Long after the sea had disappeared, some convulsions upheaved the strata and threw them on end. Here and there in the

cañons glimpses are to be had of the granite or porphyry which underlies the sandstone — the very corner-stone of the hills. It is as though one had come upon the most ancient papyrus of the world or unearthed the first Babylonian inscription.

It seems incredible the stream should have sawed its way through so many feet of rock and produced the cañon. Day and night it eats its way inward, like a saw cutting to the heart of a forest tree. But see what the rain will do — so gentle a thing as the falling rain. Together they have hewn the cliffs, which are like vast rock tombs with their Egyptian massiveness. A filmy cloud floats down the gorge, trailing along the edge of the precipices, an intangible and shadowy form, spirit-like and ethereal, receiving the rays of the setting sun and becoming golden and then rose-colored, and dissolving away at last into the invisible. This fugitive, shadowy thing, this bit of mist, is the mountain sculptor.

The rocks were the prototype of the temple, as was the forest of the Gothic cathedral, the date-palm of the Byzantine dome. But there worships here only the cañon-wren. He is the high priest who lifts up his voice in these rock temples — a

sweet utterance delivered with the usual abandon of the wrens.

Above the cliffs, on the precipitous slopes, is the impress of still another agent. The ledge, smoothed as by a plane, and the scattered boulders amidst the dead timber and small aspens, give it an appearance of extreme desolation. Here, where now the Indian paint-brush glows in summer, the glacier crept snail-like down the mountain, from its cradle in some *cirque* above the forest. Timber-line is the frontier, the boundary between the verdant world and the land of snow and ice.

It was the glaciers which in the days of their strength chiseled the lake basins every one, and began the great cañons on which the streams have been at work ever since. At the same time they laid out the *moraines*, like so many parks, where the pines and the spruce have planted themselves. They did the rough work and prepared the great rock masses for the finer work of the rain and frost and wind — as the stone-cutter precedes the sculptor.

These lakes in many cases became the glacial meadows of today, which are like jewels set in the vast matrix of rock. Out of elemental changes,

terrible in their immensity, came some of the most charming of all wild gardens,—as a rainbow follows a thunder-storm. These serene and altogether beautiful aspects of Nature were the outcome of tumult and passion—earthquakes, avalanches, lava-flows, glaciers, and now these idyllic meadows, beloved of bees and blossoms.

There is a certain cañon hereabout which is closed abruptly at one end by a precipice, over which descends a considerable stream. This fall is a thing of beauty, and so holds the eye that few think of scaling the cliffs to see what may be beyond. But, as it happens, there lies above, and sundered from the world beneath, one of the most delightful little valleys in the Rockies—a long, narrow defile, flanked by perpendicular cliffs of pink and red and buff sandstone.

All day the black-headed grosbeak sings in the aspens, dropping from one reverie into another. You may hear the voice of the green-tailed towhee, and the cañon-wren singing from his rock temple. The stream winds along the floor of the little valley, which is some eight thousand feet above the sea, now through quaking aspens and now under spruce, and its voice is as the murmuring

of pines. This is the haunt of the shooting-star and the Alpine mertensia, delicate and exquisite blossoms, wooed by fugitive sunbeams and by the floating mist; which dwell in a subdued and tempered light amidst the Alpine silence, as in some floral cloister. Such are the rare and beautiful places of earth, which the mountain barriers defend and the clouds veil, as if they cherished here the last vestige of the fading youth and innocence of the old world.

There are days when the clouds shut down upon the little valley, veiling it from mortal eyes. The cliffs and buttes seem to float in air; the trail becomes a path to the clouds. You have only to go up on some ridge, and the pinnacles, looming in the fog, appear to be forlorn rocks in mid-ocean. It is the isolation again of the sea and of the desert.

At such times one receives impressions from the mountains which bring to mind the ocean, as if these retained memories — as they still bear traces — of the waters which gave them birth. This relation, once so intimate, is now sundered and only to be inferred. Where is the ancient sea which mothered the Rockies? The desert is

its vast bed, now unoccupied. It vanished forever, leaving its impress upon the mountains. And now this sea-child is in its dotage, and it too dwindles and wanes century by century. But the fog still recalls the mother-sea, and out of the forgotten past conjures up little waves to dance upon a primordial beach.

THE FOREST

One who is accustomed only to our eastern woods can have little idea of the true forest as it occurs in the Sierra Nevada, which is a world of itself, as distinct from any idea of the "woods" as the snow peaks, the colossal granite domes and the great cañons of the Sierra are different from the mild topography of the Berkshires.

Here is a forest primeval such as was never known east of the Cascade, not, at least, since that remote period when the sequoia flourished in Greenland. Man wanders, a mere pygmy, in a Brobdingnagian world of vast columnar trunks. This is the true home of the great conifers, the sequoia, silver fir, sugar-pine and Douglas spruce,—the magnificent of the earth. There is no wilderness of saplings as in the woods, and the general openness of the forest is remarkable, so that one has far-reaching vistas through splendid arches and is able to appreciate the size and character of individual trees.

Distinct from all others, the sequoias are a race apart. The big tree and the redwood of the Coast Range are the only surviving members of that ancient family, the giants of the foreworld. Their immense trunks might be the fluted columns of some noble order of architecture, surviving its builders like the marble temples of Greece,—columns three hundred feet high and thirty feet through at the base. Such a vast nave, such majestic aisles, such sublime spires, only the forest cathedrals know. Symmetrical silver firs, giant cedars and spruce grow side by side with sugar-pines of vast and irregular outline, whose huge branches, like outstretched arms, hold aloft the splendid cones—such is the ancient wood.

It is doubtful if these giant conifers are really as companionable as our eastern beeches and maples and oaks. The company is almost too grandiose; their dignity is overpowering. One could never, for instance, form such a pleasant acquaintance with a great sugar-pine as with a slender white birch. Fatherly white oaks and village elms seem to ally themselves with man as protecting deities of the wood. But this great race of trees has little affinity with our world. Be that as it may, there

is perhaps no loftier association in Nature than contact with the forest. It is the force of a tremendous personality — calm, inspiring, majestic. Like the sea, it is not to be grasped in its entirety, and the mind responds to it, as some giant sugar-pine to the wind. These sequoias, which may easily be from two to four thousand years old, have seen men come and go as so many squirrels, or as bubbles on the stream; they have outlived empires, and may again.

As the forest inspires in sensitive minds the religious sentiment, so does it impose upon all alike, silence. Self-effacement is the law. Wild animals merge into their environment and have acquired protective coloration through force of necessity. The Indian has come to imitate them; it has become second nature to him to move stealthily, to stand and sit immovable for long at a time, to speak little. To the woodsman, silence is more congenial than speech; his wood life has made him alert; he has the habit of listening, and talk interferes.

Another influence is for sanity. It cannot fail to communicate a little of its imperturbable calm, that stable equilibrium of the granite ledge and

the great tree trunks. There being none of the external and artificial excitations which constantly play on the mind in cities, a tremendous force of complex suggestion is removed, and the thought naturally works more simply and directly. The multiplicity of desires lies dormant. Everything conspires for simplicity, as in the city all things are in conspiracy against it.

A certain resourcefulness is the portion of the woodsman, a little of the independence and dexterity of the Indian, but more than this, an intellectual and spiritual resourcefulness. It devolves upon him in the solitude to become acquainted with himself — to be his own friend. A sturdy content grows out of this association with the forest. He does not require to be amused. It does not necessarily promote an unsocial state, but it does make him independent of much society. Thus the forest has its finer or spiritual influence.

Even greater is the suggestion of primitive vigor. The display of vast rude strength induces a robust state of mind quite as readily as the open-air life gives appetite and sleep. With the savage this influence is direct and may almost be classed as instinct. With the refined and cultivated mind

it must first pierce the outer shell, the veneer, and filter into the subconscious depths, as the sunlight penetrates the forest twilight and brings to life dormant seeds lying there. A new class of ideas comes to life. The seeds of thought planted long ago in the nomadic period of evolution — in the hunter stage — germinate under the forest influence and send forth shoots. It is memory — the race-memory — coming blindly to the surface, and amounts to a reversion, not so great, however, but it may be wholesome. We speak of men being *animal* when they are sensual or dissipated, unmindful that animals are neither, but eminently sane, rendering a complete and unconscious obedience to the laws of Nature. Some men make the mistake of trying to take the city to the wilderness, and, as a result, get neither one nor the other. The forest has its luxuries, and they consist, in a measure, of freedom from those things considered luxuries in the city.

Here in the Sierras we live in a wickiup, a sort of a roofless wigwam. The camp overlooks the forest in which the cañons and ranges are as folds and wrinkles. Neighbors are few, for animals conceal themselves, while song-birds are not

properly of the forest, but seek the clearing and the settlement. An Oregon snowbird has her nest near by and comes hopping about on her marketing expeditions. A pair of lazuli-finches also live on the edge of the clearing, and the male is, perhaps, the most beautiful bird in the forest. His demure little mate is seldom seen, as she is preoccupied with her domestic cares, but he constantly flits about in the chaparral, where he gleams in the sunlight like a jewel.

One other neighbor we have, an Audubon hermit-thrush, which might be a voice merely — like Echo haunting the mountain — and no bird at all. He appears to sing in the twilight only, and his song, like that of all thrushes, is spiritual and unworldly. A single white lily, tall and branching, stands near the camp, and day after day opens its ghostly racemes in the dusk to white moths which come flitting out of the forest like winged Psyches; and with the opening of the spirit-like flower comes the vesper song of the thrush.

Night in the forest is a spell, an enchantment. It descends suddenly and envelopes us in darkness, tangible and real. The wickiup stands at the edge of a little clearing, and, as we roll ourselves in our

blankets, we seem to float in inky blackness, while the pines are like beetling cliffs against the starlit heavens. Darkness and light confront each other; it is as if we hovered between them and had made our camp for the night on the borderland. But with the dawn, that luminous world has vanished and we are again under the familiar pines.

One is impressed most by the wonderful stillness of the night. Not only is the world blotted out in the enveloping darkness, but it is voiceless, and there prevails absolute silence. Rarely this is broken by the yapping of coyotes, or a dry twig snaps sharply under the foot of some animal.

Not until the wind rises does the forest recover its voice. During the day there is always music; it is as constant as noise in the city. Impalpable currents descend from the empyrean to caress only the tops of the tallest pines, coming no nearer to earth than this, and while all is silent below there arises a distant chant in the tree tops, which have been touched by an invisible hand and made to respond to moods of the sky. Full and resonant, yet with that muffled quality of tone which makes it appear always to come from a distance, the rhythmic force of this chant sways one like the

vibrations of an orchestra. Starting at some center, as if at a signal, these tremulous waves of sound recede farther and farther into the forest and die away in a sigh.

Here the tendency grows on one to wander in the early morning and again in late afternoon, to become crepuscular, like the animals, and to stay in camp in the middle of the day. Deer do not stir abroad in the heat, nor do fish bite, nor birds sing. This love of dawn and twilight is partly inspired by fear of man, but it is none the less natural. At daybreak the deer go down the cañons to the salt-licks, as surreptitiously as nymphs going to bathe. It is their witching hour, as midnight is the owls'.

To arise at dawn should be an occasion; to make it usual would mean the sacrifice of the more subtle impressions, the mind is so readily blunted by the habitual.

Like a black mantle the great forest lies over the earth as I roll myself in my blankets beside the fire. That little flaring light appears to be the only one in this dark wilderness, reclaiming a minute portion of space and making it habitable. Wherever one may be in the forest, it is only

necessary to gather a few dry sticks and strike a match. The signal summons the genii, servant of the woodsman. More properly one should use a flint, or rub two sticks together. He allies himself with man against the hosts of darkness and defies the wilderness; a merry fellow, his laugh may be heard in the crackling flames. All through the night he entertains with his merry gossip and with pictures he shows in the fire. At times he reveals his own glowing face in the embers, but quickly assumes the head of a bear or a lynx, or melts away in the flames, to reappear presently in another spot.

When I awake, the morning-star hangs low in the heavens like a great lamp, its light an infinitely pure and serene radiance with no suggestion of heat or combustion, made to appeal to some higher vision. A heap of cold gray ashes is all that is left of the fire, in the center a single glowing spot, which may have been the eye of the genii of the night. The black mantle has been lifted, and the earth is illumined by a faint glow, as if solely by the reflected rays of that planet. Unspeakably soft is this light, the forerunner of the dawn, in which the forest is bathed and from which one derives a peculiar satisfaction.

Imperceptibly, almost, it fades, and is replaced by one of a different quality — the light of day — which creeps over the world until at length one is aware that that other, which was neither of the night nor of the day, has gone. Long pale lines of fog and fleecy banks of clouds now evolve upon the horizon. The earth remains suffused in this cold light, which fascinates and still repels, making the ranges look distant and severe, and giving to the whole face of Nature an unsympathetic look. It is the beauty of marble, a Gorgon beauty, which chills the heart. In that scene is no note of human passion. Those pale clouds, cold and gray as the ashes of the fire, seem to lure to some beyond, as if they would draw one from the world of life and warmth to some region of cold and death.

Presently comes a faint blush in the sky and over the hills, a new warmth of light, as if blood now ran in those marble veins. It is the *foreglow*, which is to the sunrise what the afterglow is to the sunset. Color is again born into the world, and the earth is once more alive and sympathetic. As the sun rises, dawn, the exquisite dawn, the most ethereal thing that mortal eyes shall ever behold, flees away into the uttermost parts of

space. The mystical, alluring quality slowly dies, and it is once more the matter-of-fact light of day.

With the appearance of the sun these subtle impressions vanish, like a dream vague and unreal. Nature reasserts herself in the robust sense of existence; now the smell of frying bacon, the comforting effect of the morning coffee in a tin cup, are the real and important things. Physical life is enough in itself—so concentrated, vigorous, aggressive it is. The mere breathing, seeing, tasting are more in themselves than is possible under other conditions. How good the resiny odor of the forest! How exhilarating the scene in its pure savagery! How stimulating the morning air! How the stream lures as I get down the trout-rod, and climbing out on a sugar-pine log cast a brown hackle on the swirling glassy flood!

THE SEA

The sea ever baffles description. It is a living thing, pulsating with energy, and, possessed of a subtle consciousness, elusive and full of moods—changeable as woman and as incomprehensible. Now it is tender and appealing; again distant and cold. Perhaps it is because of its essentially feminine traits that it so beguiles. Certainly it fascinates as nothing else fascinates in Nature.

There is what may be called a *sense* of the sea, which is indefinable. No lesser body of water, no other aspect of Nature affords this. It is in the air, like a touch of autumn, and we know it as much through feeling as through seeing. The coast is saturated for some distance inland with this presence of the sea, much as the beach is soaked with salt water. It is music and poetry to the soul and as elusive as they, wrapping us in dreams and yielding fugitive glimpses of that which we may never grasp, but which skirts, like a beautiful phantom, the mind's horizon. Like music,

it is an opiate, and unlocks for us new states of mind in which we wander, as in halls of alabaster and mother-of-pearl, but where, alas, we may not linger. We can as readily sound the ocean as fathom the feelings it inspires. It is too deep for thought. As often as the sea speaks to us of the birth of Venus and of Joy, so also does it remind of Prometheus bound and the thrall of Nature.

Who can recall those impressions of the sea which were his as a child — a relish, a vividness, perhaps never experienced in after life? What wonderful thing was the pure white sand; what fascinating objects the sea-shells — and the boom of the surf, what thrilling music! No longer is it that simple strain, but inwrought with hopes and fears and memories. The children on the beach play in an ocean of their own; we cannot put foot on their shore, try as we will. Sometimes, as the salty fragrance is wafted over the sands, one is on the point of regaining that lost consciousness, and then it eludes and is gone. Never again shall we find that alluring and altogether wonderful sea upon which we happened in childhood. Yet who knows but in some auspicious moment we may come upon one still more entrancing.

With an east wind the sea is always musical. It breaks forth in its solemn chant, as though the wind were an influence that awakened memories of the immeasurable past, and inspired this primitive song. From a distance it comes like a rhythmical murmur upon the horizon, and it is strange how this sound will fall upon unheeding ears, and then with what suddenness one becomes aware of it. At times it loses its rhythmical character and becomes a sort of recitative. One imagines the venerable sea to be muttering of its epic past — to be relating that wonderful saga.

Yesterday the sea was glass. It lay tranquil as if never again could its surface be ruffled. So indefinite was the sky-line it was difficult to tell which was sky and which water,— a dream-ocean, a charming vision, which was to dissolve like a mirage of the desert.

This morning how it was changed! Up from the shore came a muffled and ominous growl. As one approached, this ceased, and there was instead the spitting and hissing of little waves — a sound of irritation and suppressed anger. The sea was leaden, aggressive, formidable. It was as if some troubled spirit had entered there — it was possessed

of a devil. This unrest is savage and terrible like that of a caged tiger. The eye turns with relief to the imperturbable rock, which seems to confine and restrain the angry waters. The granite rests in unalterable calm, sphinxlike, on the edge of the watery desert. It stands for the constant and enduring, as it forever confronts the inconstant and changeful sea. They are two opposing forces: the sea coy, arch, coquettish, now bewitching and full of her beautiful wiles, now disdainful and imperious, again mad, tempestuous, hurling herself in her wild passion; the granite grim, massive, unconquerable.

Late in the afternoon the wind is blowing from the north, the sky has cleared and the sea is sapphire, dotted with whitecaps; yesterday, opal, this morning leaden, and later, sapphire. It is no longer formidable, rather is it cold and distant. The *face* of the waters is a peculiarly pertinent figure of speech, for the sea is as a face reflecting all moods. In the glare of noonday, ocean and landscape seem to discharge themselves of feeling,—that is to say, they are barren to the eye and unproductive of feeling in us. But in the atmosphere of sunset and twilight they are again

expressive. The quality of light may be compared to the *timbre* of sound. Sometimes — as at noon — it is like the blare of brass, and, again, it has the softness of wood-winds, the tenderness of violins and cellos.

The receding day carries with it the disquieting influences, and night exorcises the demons of unrest. They scurry away with the sunset clouds on the horizon like fleeing witches. As if in obedience to some silent command, the sea becomes passive. He must be distraught indeed who can look at it now without coming under the spell of the hour — the serene hour. It is as if the passion and strife of life had been succeeded by the beautiful calm of death. To gaze on the mute and motionless ocean at ebb-tide is to be inevitably inspired to reflection, so potent is the suggestion of repose. Apparently the forces of Nature have conspired together for peace.

Death? Nay, rather transfiguration, for now the sea is illumined by a golden radiance. Stretches of burnished copper and molten gold merge one into the other; areas again of liquid silver, and beyond, the vast ethereal blue. Out of the coves shadows come creeping and stealing over the water,

silently advancing to overwhelm the rose and copper and gold, while these recede and slip out to sea, growing fainter and fainter until they are absorbed in the all-pervading dusk. In the succeeding darkness one beholds, not the sea, but a vast bottomless pit, Dantesque and terrible.

Above all else it is the immense vigor of the sea which appeals to us. We are made to feel the play of cosmic forces. The long stretch of rocky coast is rude and Titanic; the expanse of ocean suggests that chaos from which the earth has gradually been redeemed. The waters piling themselves up are as elemental and chaotic as nebulæ or the seething envelopes of the sun. It is incredible they should be hitched to the gentle moon, and should follow that pale phantom like a leashed panther, now purring, now growling, but obedient always. The mountains impress one with their age, the sea with its agelessness. Here at least is something which appears superior to Time. It is no more youth than it is age — the formless, without beginning and without end, but always that superabundant vigor, power, freedom.

Denuded woodland and disfigured landscape bring to mind that iron Necessity which it is not

pleasant to see advertised. But the sea is unimproved. It is the universal solvent, and dissolves the trivial, the commonplace, the mean, and gives an heroic cast to whatever it touches. One needs, however, to observe it from the shore and to have that vantage which is derived from being on land. In mid-ocean it is too entirely dominant — there is nothing to afford contrast. It is like the moon — so fair at a distance, such desolation upon its surface. One can be alone on the mountains and find them friendly, but who would choose to be alone in mid-ocean? There is a sense of isolation, a disassociation, as if one had, in fact, severed connection with earthly affairs altogether; hour after hour and day after day the same inscrutable desert of water, which begins everywhere and ends nowhere.

Yet how inviting it appears when the glittering sunbeams dance on a gently rippling surface. It seems an expression of irrepressible gaiety as if all the joyousness in Nature had come to the surface here. The twinkling dance of the innocent waves — who can recall the tragedies now?

The gulls appear to enjoy some favoritism, as though they were kin to the sea — its very own. To them it is altogether friendly; they find it

always congenial. Whether the breeze blows north or south, it is all the same. In the last gale it was next to impossible to keep one's feet in the full force of the wind, but the gulls sustained themselves with ease. Over the gray-green sea the clouds appeared to rest like a cowl. The thunder of the waves drowned all else and shut one off from the world; consciousness was swallowed up in the din and tumult. In vast mountainous billows the swirling waters rushed for the shore and dissolved in spray. I stood in the lee of the rocks, bracing myself against the gale — a reed shaken by the wind — and saw flocks of coots riding at ease in the maelstrom beyond. Always facing the wind, they sank into the troughs and rose again, were lost to view as the crests broke over them, and reappeared in the old position. Ships would have dragged their anchors where these coots rode at ease, anchored by heaven knows what power.

Where the surf broke with its terrible thunder, countless crabs, urchins, starfish and whelk reposed in the rockweed and Irish moss. Were they aware of the storm? Did the anemones shut their doors or open them wider in view of a feast?

The marvelous pools in which they live have

no resemblance to the surface of the sea, but suggest the bottom of the deep — limpid, dark and still. Each is a world by itself, inhabited by a strange order of beings: dull nomads, which drift with the waves, or cling, they know not how, to something, they know not what. If there is any event in their life it is the rise of the tide. In all likelihood they do not know our day and night, are not impressed by these phenomena; but the flood is their day, the ebb their night. Small whelk stud the rich background of sea-mosses like precious stones, some gamboge, some orange, others white as marble or banded with black. There are colonies of sertularia tinted a delicate mauve, solitary sea-urchins of heliotrope, and starfish, some luminous pink, others deep rose-madder. These hues are characteristic of sea life, as of lichens and mushrooms and the lower orders in general; not crude colors, red and blue, but delicate gradations. Now and again a single jellyfish, stranded by the receding tide, a spectral diaphanous creature, hovers ghostlike in the liquid atmosphere of his strange world. It is all of an antediluvian and prehistoric character, associated with the beginning of things — with an age of fishes rather than an

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THE SEA

age of man. The deathless sea takes no note of the flight of time; it still brings forth only brood upon brood of slimy, goggle-eyed things.

What a harvest, this of the sea! After a storm all craft put out. The lobstermen in their dories take in the lobster-pots and replenish the bait, while the dory rises and sinks on the long swells. Fleets of mackerel boats and schooners bound for the Banks after cod and haddock creep along the horizon-line. On the beach men rake up the Irish moss, flung ashore in the storm, and spread it on old sails to bleach in the sun. Others haul kelp for the fields, while women gather driftwood. So great a resource is the ocean; so many gleaners there are.

The sea is humanized and redeemed somewhat by the presence of these workers. It is agreeable to reflect that while it nourishes them, they in turn do not mar it. Man communicates the character of his mind and aims to the landscape; enriches it by his labor on the farm, and disfigures it again in a thousand ways, till it is as barren and sordid as his own thoughts. But upon the deep he makes no impression. It is virgin ever. It overpowers him by its stern music — lifts him for

a time a little above the sordid and commonplace. The sailor ashore is not the same man he is out there. He must needs have courage, for he must meet the sea. Portuguese, Swedes, Finns — poor stuff for poems in their sailor boarding-houses ashore. But hear how they face the winter gales. Learn the actual experience which makes up that life. The sea invests the poorest, meanest man with heroic qualities. That is his stage; there he looms large. Oil-skins and sou'wester are but his make-up.

I take home a piece of driftwood, for no ordinary fire, but to kindle the imagination, for it is saturated with memories and carries with it the enchantment of the sea. To light this is to set in motion a sort of magic-play. True *driftwood* has been seasoned by the waters and mellowed by the years. Not any piece of a lobster-pot, or pleasure yacht, or, for that matter, of any modern craft at all is driftwood. It must have come from the timber of a vessel built in the olden time when copper bolts were used, so that the wood is impregnated with copper salts. That is merely the chemistry of it. The wood is saturated with sunshine and moonlight as well, with the storms and

calms of the sea — its passions, its subtle moods; more than this, it absorbed of the human life whose destiny was involved with the vessel — the tragedy, the woe. It had two lives — a forest life and a sea life. By force of tragedy alone it became driftwood. Winter and summer the sea sang its brave songs over the boat and chanted her requiem at last as she lay on the ledge. This fragment drifted ashore out of the wreck of a vessel, out of the wreck of great hopes, out of the passion of the sea.

Driftwood, then, is to be lighted in a spirit of reverence. No ordinary blaze, rather is it an altar fire to Poseidon, to whom were immolated the victims; to Aphrodite born of the waves. Rather is it the funeral pyre of a sea-bird, now to rise again from its ashes. It is not to warm the hands, this magic sea-fire, which has borrowed the emerald and sapphire and azure of the waters and reflects still the phosphorescent gleam which lay in the wake of the vessel, but to kindle some feeling and to nurture vague dreams. To set match to this pyre is to invoke the spirit of the deep, to hear the crooning of some distant surf, the hissing of the fretful spray; to conjure up again the wondrous opaline sea.

Somewhere on this phantom ocean rides a phantom bark with all sails set, which reflect, now a rose-pink, now the faintest imaginable golden sheen, and disappear in the dusk. Perchance there flits over the mind a haunting recollection of that lost sea of childhood — that sea of virgin impressions — to vanish also into the dusk of oblivion.

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